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ROBUST PROTECTIVE FACTORS THAT HELP YOUTHS WITH A PARENT
EXPERIENCING DEPRESSION ACHIEVE POSITIVE ADJUSTMENT

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

by

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Abstract

ROBUST PROTECTIVE FACTORS THAT HELP YOUTHS WITH A PARENT EXPERIENCING DEPRESSION ACHIEVE POSITIVE ADJUSTMENT

By Hsing-Jung Chen, Ph. D.

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2009

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Based on a resilience framework, the purpose of this study was to address knowledge gaps about minority youths who lived in rural and poor areas, had a primary caregiver with a diagnosis of depression, and faced multiple psychosocial stressors. Three research objectives included: 1) To explore the association between ecological protective factors and four developmental outcomes-emotional adjustment, behavioral adjustment, school performance, and educational aspiration; 2) To identify the robust protective factors; and 3) To explore the interactive relationships between risk and robust protective factors.

Families (N=126) where the primary caregiver had a diagnosis of major depression and had a child aged 10-14 years old were selected for this study. This study used a longitudinal data set: Family and Community Health Study (FACHS). Six theoretical protective factors in individual-family-community levels and four youths' developmental outcomes were selected from the FACHS: emotional adjustment; behavioral adjustment;

school performance; and educational aspiration. Separate hierarchical regression analyses were conducted for each of the youths' developmental outcomes. Before conducting the regression analyses, factor analysis, power analysis, data screening and regression assumptions assessment were conducted.

For the research objective 1 and 2, this study's findings suggested that overall, with the exception of parental monitoring, these theoretical protective factors only operated in specific developmental domains. Only parental monitoring was identified as a robust protective factor for this population. The regression model (R^2_{adj}) explained 11.5 % of the variance of depression, 29.8 % of conduct behavior, 15.2 % of school performance, and 18.7 % of educational aspiration. Youths' optimism ($\beta = -.215$) significantly contributed to the Emotional Adjustment Model. Youths' self control ($\beta = -.210$), prosocial friendship ($\beta = -.187$), and parental monitoring ($\beta = -.250$) significantly contributed to the Behavioral Adjustment Model. Parental monitoring ($\beta = .189$) significantly contributed to the School Performance Model. Parental monitoring ($\beta = .278$) and teacher's support ($\beta = .292$) significantly contributed to the Educational Aspiration Model. For objective 3, this study suggested that the effect of parental monitoring did not vary by the risk levels. In other words, regardless of the change of risk effect, parental monitoring consistently functioned as a protective effect on youth's educational aspiration.

Based on the findings from this study, six suggestions for future research, four recommendations for intervention and mental health-related services systems, and one suggestion for social work education were provided.

CHAPTER 1: BACKGROUND, SIGNIFICANCE, KEY CONCEPTS, AIMS

Introduction

Research has consistently documented that risk factors are highly associated with maladjustment in children who grow up in a family with a parent with depression. However, research has devoted little attention to significant protective factors that create positive adjustment in these at-risk children. Hence, social workers may have insufficient knowledge to recognize protective factors, which in turn, may weaken social workers' interventions. Moreover, the risk and protective contexts are not static. Social workers need knowledge about the dynamic relationships between risk and protective factors in order to understand the most important protective factors in specific risk contexts. This is best understood when considering these factors over time from observations. Hence, this study used an existing longitudinal data set to explore the association of risk and protective factors with positive adjustment for youths who have multiple risk factors including the following: having a parent with a diagnosis of depression, facing family financial stress, and living in a disorganized community.

The resilience perspective, grounded in ecological systems and developmental theories serves as a framework for reviewing literature in Chapters 1 and 2. As risk factors and protective factors and positive adjustment are the key concepts which compose the resilience perspective, literature reviewed in Chapters 1 and 2 is tied to these three concepts. Chapter 1 begins with a brief review of the risk factors related to the maladjustment of children whose parent has depression. Next, Chapter 1 notes a research

trend that shifted from risk-focused to protective-focused/resilience studies. Significant knowledge gaps related to this research area and the specific research aims and concepts used throughout this dissertation are also mentioned in Chapter 1.

Similar to the literature review structure of Chapter 1, Chapter 2 begins with a discussion regarding various trajectories of the development of maladjustment. First, a family system is viewed as a potential proximal risk contributing to youths' maladjustment through the accumulation of negatively family emotions, thinking patterns, and interactive patterns. The negative myths related to family risk are highlighted. Moreover, this chapter discusses the impact of distal risk factors on youths' development, deriving from macrosystems and exosystems, such as a disorganized neighborhood and low social-economic status. Next, the literature review shifts to the protective factors for the positive development of children in disadvantaged environments. This review specially focused on literature about which protective factors may have a broad range of protection across domains of youths' developmental outcomes. Several theoretical protective factors are identified for this research. Research questions and hypotheses are also addressed in the end of Chapter 2.

Chapter 3 focuses on research methodology and data analysis plan. This study used secondary data analysis. The strengths and limitations of using data from the Family and Community Health Study (FACHS) are discussed. Conceptual models of both FACHS and this study are provided along with a discussion of relevant variables. Finally, Chapter 4 and 5 report research findings and address recommendations.

Background and Scope of Problem

A national survey with a representative sample reported that 16.5 million adults aged 18 or older had at least one Major Depressive Episode (MDE) in the past year. Nearly 10.1 million people who had a MDE in past year also had severe impairment in one or more role domains (SAMHSA, 2007). Severe depressive symptoms also increase individuals' impaired judgment and risk-seeking behaviors such as using alcohol and illicit drugs, and/or committing suicide. In addition to the ill person's individual suffering, the social cost for depression is unaccountable including a decrease in manpower and productivity and the increased expense of social services, mental health care and even criminal justice services (Marsh, 1998).

Moreover, families of individuals with depression tend to face multiple risks, which are more likely to contribute to children's maladjustment (Beardslee, Versage, & Gladstone, 1998; Hammen, 2003). Given the significant negative influence depression has on individuals and their children, the clear identification of protective factors for such families is crucial for the development of effective programs that decrease the negative effects of risks and promote the well-being for these children. Hence, this study focuses on the protective factors for children whose parent has depression. The discussion in this chapter will: (1) review the research trends for studying a family with a parent with depression; (2) introduce the resilience perspective and key concepts of this study; (3) address knowledge gaps in this research area; and (4) address research aims and potential contributions of this study

Research Trends

Research reports that children of parents with depression were at high risk of developing behavioral problems (Kahn, Brandt, & Whitaker, 2004; Kim-Cohen et al., 2005; Radke-Yarrow, Nottelmann, Martinez, Fox, & Belmont, 1992), emotional problems (Carro, Grant, Gotliv, & Compas, 1993; Langrock, Compas, Keller, Merchant, & Copeland, 2002; Oyserman, Mowbray, & Meares, 2000), and various kinds of maladjustment across different stages of development (Hammen & Brenna, 2001; Hops, 1992; Zahn-Waxler, Duggal, & Gruber, 2002). In general, 38-48% of the children ages 6 to 23 of treatment-seeking parents with depression may have Major Depression Disorder (MDD), while only 4-24 % of the children of healthy parents may have MDD (Hammen, 2003; Marsh, 1998). The rate of psychiatric illness for these children will increase to 59.2%, if their parent(s) and grandparent(s) have MDD (Weissman et al., 2006). Another discouraging finding showed a strong association between mental illness and substance use disorders for young adults 12 to 25 years old (SAMHSA, 2007). Overall, many studies concluded that children who have a parent with depression are more likely to have developmental problems. These studies are referred to as *risk studies* because they focus on the relationships between risk variables and individuals' maladjustment (Luthar, 1997; Rutter, 1990 b, 2001).

Early on, the negative impact of mothers with depression on their children had been a dominant research topic for risk studies in this area. Researchers were also interested in how mothers contribute to their children's developmental problems. Research has suggested that children's negative adjustment could result directly from a deficient

mother-child interaction, such as inept parenting and/or the lack of sensitive caring from mothers (Hammen, 1991; Hans, 2005; Oyserman, Mowbray, & Meares, 2000). For instance, in their meta-analysis of the depression correlates of parenting in published research from 1974 to 1996, Lovejoy and colleagues found a strong association between depression and irritable and hostile parenting; in contrast, depression had a relatively weak association with positive parenting (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). In addition to the negative mother-children interaction, the increase in conflictual family relationships related to maternal depression has been viewed as one key risk factor for these children's maladjustment (Oyserman, Mowbray, & Meares, 2000; Rutter, 1990a; Seifer, 2003). Unfortunately, the early research that focused on mothers' problems did not benefit these families, but further disadvantaged them by placing blame entirely on these mothers (Marsh, Lefley, Evans-Rhodes, Ansell, Doerzbacher, Labarbera, & Paluzzi, 1996; Marsh et al., 1998).

Some researchers have suggested using a multidimensional framework, rather than the deficit parent-child relationship only, to explain the effect of parental depression on their children (Hans, 2005; Hutchison, Matto, Harrigan, Charlesworth, & Viggiani, 2007). System theories and the ecological model, therefore, have been applied to understand the circumstances of individuals with depression and their families. Some specific biological-psychological-social risk factors related to the maladjusted children of a parent with depression have been identified (Hans, 2005). For example, biological-related studies have consistently documented that three key neurotransmitters are associated with depression: 1) catecholamine norepinephrine, 2) indoleamine serotonin (also known as 5-

hydroxytryptamine, or 5-HT), and 3) dopamine (Thase, Jindal, & Howland, 2002). Abnormal neurotransmitters in a parent with depression may be identical in his/her children (Garber, 2005; Thase, Jindal, & Howland, 2002).

Although findings from risk studies have helped us better understand how these families suffer from the mental illness, it is still too early to draw any conclusions regarding what factor(s) mainly contribute to the maladjustment of children whose parent has depression. In fact, different researchers draw very different conclusions. Based on a comprehensive literature review, Garber (2005) argued that biological factors are more important than psychosocial-related factors in determining the developmental outcomes for children of a parent with depression; whereas, Corcoran and Walsh (2006) drew the opposite conclusion.

The difficulty in drawing a consistent conclusion from previous studies may reflect the varied circumstances in families of a parent with depression, including: 1) the variety of the symptoms of depression (e.g. severity, chronicity, and time of occurrence) for each ill parent, and 2) the variety of the preexisting and current risk and protective factors in families (Hammen, 1991). In addition, the change of diagnostic criteria for depression over the years, and the various methodological designs in the existing studies (e.g. clinical sample vs. community sample, and current depression diagnosis vs. lifetime diagnosis) also make it difficult to compare and contrast past studies and draw conclusions in this area (Hammen, 2003; Rutter, 1990a). Despite this lack of consensus regarding any major cause of maladjustment in these children, researchers tend to agree that it is not the existence of a single risk effect of the mental illness that contributes to

negative outcomes but the cumulative effect of multiple risk factors related to parental depression (Hans, 2005; Mordoch & Hall, 2002; Rutter, 1990a; Sameroff & Seifer, 1983).

On the other hand, some studies found that many children do not develop severe maladjustment in spite of living in disadvantaged environments (Werner, 1993, 2005). The various developmental outcomes in disadvantaged children have led researchers to investigate possible influences and how these might contribute to children's positive outcomes. Hence, more recent research on children of a parent with depression has shifted the focus from risk factors to protective factors. It also reflects a change of worldview from a pathological perspective to the resilience perspective (Core & Eckerode, 1994; Rutter, 1990a).

The risk-oriented research, grounded in a pathological worldview, has been criticized for its focus on problems, damaging the self-esteem of members of a vulnerable population which, in turn, reduces this population's likelihood of positive growth under adversity (Core & Eckerode, 1994; Saleebey, 2006). In contrast, *resilience studies* grounded in the resilience perspective attempt to identify protective factors from disadvantaged populations and their environments. The focus of resilience studies is the relationships between protective factors and positive adjustment despite the risk influence (Rutter, 1990a, 2006).

In mental health areas, the development of resilience studies can be traced back to unexpected findings in several risk-oriented studies on children of a parent with a severe mental illness (Hammen, 1991; Masten, 2001). The St. Louis High-Risk Study, the Minnesota High-Risk Study, and the Rochester Longitudinal Study, coincidentally found

that some children of a parent with a severe mental illness resulted in the absence of psychopathology, and a few of these children even demonstrated excellent age-related social functioning (Hammen, 1991; Sameroff & Seifer, 1983).

One of the earliest and most remarkable resilience studies was conducted by Werner and colleagues in 1950s. They followed 201 infants who were born in 1955 to families with multiple problems, such as low income, alcohol misuse, and/or mental illness, on the Kauai island of Hawaii for 30 years. This study suggested various protective factors, such as children's positive temperament, supportive adults, and positive opportunities at these children's major life transitions that may promote their well-being under high-risk conditions (Werner, 1993, 2005). The comprehensive information from this study also inspired many researchers to explore how children reared in disadvantaged environments achieved age-related developmental tasks across the course of their lives.

Although previous resilience research discussed what may contribute to individuals' positive adjustment, previous research in this study area also raised some important questions and identified some knowledge gaps that needs further exploration. For example, few studies were conducted in rural areas; therefore, findings from previous studies may be less relevant to children of a parent with depression in rural areas. The rural sample in this study helps address these issues. Since this study focused on high-risk youths and is grounded in the resilience perspective, the definition of youths and the key ideas of the perspective will first be addressed. Next, knowledge gaps in this area including methodological issues will be addressed.

The Resilience Perspective and Key Concepts

Garnezy, Rutter, Werner, and Smith early made significant contributions to the development of resilience research, as well as its theoretical foundation (Masten, 2001). The core spirit of resilience is learning from success—individuals achieve positive adjustment regardless of adversities (Fraser, Richmond, & Galinsky, 1999). Findings of resilience studies have informed theories of etiology and guided intervention and policy for disadvantaged populations (Rutter, 1987; Waller, 2001; Walsh, 2003).

Although the construct of resilience is not yet precisely defined, there is some agreement in the literature regarding the following key resilience constructs: risk factors, protective factors, and positive adjustment (Kirby & Fraser, 1997; Luthar, Cicchetti, & Becker, 2000; Masten, 2001; Rutter, 2000). In addition, a resilience model should reflect a contextual- and process-orientation when examining the association among risk, protection, and positive adjustment.

Rutter (1987) defined resilience as the protective mechanisms which prevent individuals from the risk mechanisms. Luthar, Cicchetti, and Becker (2000) elaborated on Rutter's ideas about the various relationships between risk and protective mechanisms, and further stated that resilience is a “dynamic process encompassing positive adaptation within the context of significant adversity” (p.543). Resilience, therefore, has been viewed as a context-relevant phenomenon. In other words, resilience can not be defined out of context. One event or characteristic is viewed as a favorable factor that promotes an individual's resilience, whereas the same event or characteristic could be viewed as a threat that worsens the person's disadvantaged positions.

Furthermore, *dynamic process* warrants that the phenomenon of resilience is a continuous changing process rather than a static condition. Hence, research should assess resilience by using multiple observation points (Luthar, Cicchetti, & Becker, 2000). The context- and process-oriented approaches have been emphasized through out the resilience literature although they are not necessarily incorporated in resilience research (Allen-Meares & Fraser, 2004; Hammen & Brennan, 2003; Kliewer et al., 2006; Walsh, 2003).

The resilience framework has been used to study different disadvantaged populations who have experienced stress, trauma, and/or severe illness (Kirby & Fraser, 1997). Given the varied research interests among different disciplines, some concepts similar to risk, protection, and positive adjustment were used in existing research. For example, stressors and adversity are similar to the concept of risk. Positive adaptations and resilience outcomes are comparable to the concept of positive adjustments.

Some resilience researchers encourage the use of the term *mechanism* instead of *factor* because the term factor is more likely to imply the static characteristics of a situation/person whereas mechanism is more likely to refer to the process of how a situation/person reduces the risk effect (Luthar, Cicchetti, & Becker 2000). In this study, the term *factor* was preferred because the goal of this study was to identify which protective factors function for the target population. However, this does not mean that this study overlooked the process-orientation of resilience. In fact, because this study also explored how the protective factors changed over time and how it interacted with the risk factors, findings of this study also provide some information about the protective

mechanisms. In Chapter 2, the terms protective factor/mechanism and risk factor/mechanism are reported as the authors used them in their research contexts.

Risk Factors/ Disadvantaged Environments

In studies of resilience, risk can refer to a variety of life stressors including a crisis or a trauma which increases the probability of maladjustment in individuals (Gore & Eckenrode, 1994; Kirby & Fraser, 1997; Luthar, Cicchetti, & Becker, 2000). Resilience researchers tend to treat life stressors as negative events, although in stress-coping theory, life stressors can be either negative or positive depending on individuals' perceptions of their tangible or intangible resources related to coping with the environmental demands (Holland & Kilpatrick, 2003; Lazarus & Folkman, 1984).

Kirby and Fraser (1997) defined risk factors as “any influence that increases the probability of onset, digresses to a more serious state or the maintenance of a problem condition” (p.11). Risk factors, in their definition, could be the main cause to initial problems, and/or the enhanced influence that worsens existing problems. The risk influence can derive from different systems in various forms. In this study, risk factors referred to the circumstances of family and community with which youths interacted that were more likely to increase their likelihood of becoming maladjusted. These risk factors were apt to be chronic, such as poverty and mental illness. Moreover, the term disadvantaged environments, in this study, referred to environmental risk factors including a parent with depressive symptoms, and living in a family with lower incomes and in a disorganized community.

Protective Factors/Mechanisms

There is no unitary definition of protective factors (Luthar, Cicchetti, & Becker, 2000). Key resilience authors and researchers argued that this, in part, resulted from a lack of consistent and clear operationalization of the concept by early resilience researchers (Luthar, Cicchetti, & Becker, 2000). However, this lack of common definition for protection and resilience was perhaps an inevitable challenge that resilience researchers have faced because the resilience, as well as protection and risk, can not be defined out of the target population's context (Fraser, Richman, & Galinsky, 1999; Luthar, Cicchetti, & Becker, 2000). Hence, resilience researchers may not be able to operationalize the concept of protection in a precise term that can be applied to different populations and cultures.

Although there is no one definition of protective factors, previous studies seem to indicate some common patterns in terms of describing protective factors: The influence, characteristic, and/or competence coming from individuals and/or environments that reduces the likelihood of maladjustment for individuals who face great stress (Bellin & Kovacs, 2006; McCubbin, Thompson, & McCubbin, 1996; Rutter, 1985). For example, Rutter (1985) defined protective factors as any influence that modifies a person's negative response to environmental hazards related to her/his maladjustment. Kirby and Fraser (1997) further clarified that protective factors which helped individuals resist or decrease risk can derive from internal and/or external forces. Depending upon the target population's context, protection can be tangible, such as money or social services programs, or intangible, such as family integrity, ethnic identity, cultural heritage, and

self-esteem (Kirby & Fraser, 1997; Luthar, Cicchetti, & Becker, 2000; McCubbin, Thompson, & McCubbin, 1996; Rutter, 1985). Moreover, some researchers used a broader research framework that tended to cluster protective factors according to their sources such as individual, family, community (Gamzer, 1993; Kirby & Fraser, 1997).

In this study, protective factors were defined as any positive internal and/or external influence that contributes to positive development of at-risk youths. With this definition, for quantitative research, it simply means that the predictor inversely correlated to negative outcomes, but positively correlated to desirable positive outcomes.

One thing should be noted is that a few resilience researchers argue that the term protective factors should be used in a restrict condition: The factor function as a protection for high-risk population but not for low-risk protection. Moreover, factors that promote positive outcomes for both high and low risk populations should be called resource factors (Cornard & Hammen, 1993). This suggestion could be very helpful for the knowledge building of a resilience theory in that it could enhance the concept clarity of protection. However, a majority of the literature in this study seems to less emphasize the differences between the resource factors and protective factors. The term protective factors have been used for both high and low risk circumstances.

Some disadvantages of using this approach in terms of research feasibility and practical implication could overshadow this insightful suggestion. Researchers who want to differentiate risk and resources factors seem to be best assessed through a comparison of high- and low-risk populations which may not be feasible for many studies, and the resource factors resulting from this approach could be overlooked. Given the both

reasons in research feasibility and practical implications -as long as the knowledge can be use to promote the well-beings of a high-risk population, social workers and other relevant helping professionals should be fully aware, this study used the term protective factor to refer to those factors that promote positive adjustment regardless of high or low-risk populations.

Robust Protective Factors

In this study, the term *robust protective factors* was used to highlight the protective factors which are associated with the target youths' well-being in two or more domains of developmental outcomes such as fewer internal and external behavior problems, fewer internal behavior problems and high school performance, or fewer externalizing behavior problems and high school performance.

In the field of mental health, it is not unusual for researchers to report that these youths have maladjustment in more than one domain with comorbidity of depression and conduct disorder (Chen, 2000; Chen, & Simons-Morton, 2009). Moreover, literature has suggested that under similar risks, these at-risk youths may develop different adjustment problems (Hammen & Brenna, 2001; Kahn, Brandt, & Whitaker, 2004).

Given the poor economy and limited social resources, to maximize the efficiency of services to these youths in terms of preventing and reducing multiple maladjustments or various types of maladjustments, knowledge about a factor with a broad protective effect across more than one developmental domain is needed. Smokowski et al. (2004) called factors having a widespread functioning (p. 67). In this study, the term *robust protective*

factor corresponds to their ideas. The term robust was chosen based on the consideration in theory and statistical methods.

The term robust basically means strong and healthy (Oxford reference online, 2009c). Theoretically, protective factors should be strong enough to help these youths develop healthy emotions, culturally-valued behaviors, and age-appropriate competence. Statistically, robust methods are less limited by the assumptions about the data, such as, the assumption that data residuals should be normally distributed. In this study, robust statistical method, hierarchical regression analysis, is used to address research questions.

In short, the term “robust” reflects the theoretical and statistical meanings of this study. Hence, the term was used to highlight the factors with widespread effect and to distinguish them from factors with specific function in only one domain of developmental outcome.

Adaptation / Adjustment

Both the terms *adaptation* and *adjustment* generally mean the result of individuals responding to environmental demands (Barker, 2003; Lerner, 1998). The term adaptation is often defined by the concept of positive adjusted outcomes. For example, in the *Social Work Dictionary*, adjustment is defined as “the activities exerted by an individual to satisfy a need or overcome an obstacle to return a harmonious fit with the environment...successful adjustment results in adaptation....” (Barker, 2003, p. 276). In child psychology, adaption is viewed as “consisting of optimal resolutions between the person (child) and his or her environment” (Lerner, 1998, p.776).

Some researchers like Germain, Luther, and McCubbin prefer to distinguish *adjustment* from the term of *adaptation* (see Germain, 1991; Luthar, D'Avanzo, & Hites, 2003; McCubbin, Thompson, & McCubbin, 1996). Germain felt that adaptation was more relevant to the ecological perspective than the term adjustment because adaptation's underlying assumption reflects an active agent in human beings. However, there seems to be an increasingly vague differentiation between adjustment and adaptation in more recent studies (Prellow & Loukas, 2003). In fact, resilience studies in the last decade are more likely to use the term adjustment rather than adaptation (e.g. Bellin, 2006; Rhule, McMahon, Spieker, & Munson, 2006). The discussion of why adjustment was more popular than adaptation in resilience studies was beyond the present study's interest. In order to reflect the current trend of resilience studies, the term adjustment was used.

Positive Adjustment / Resilience Outcome

A review of Masten (2001) concluded that good adjustment, or what Kirby and Fraser (1997) called "resilience outcomes" can refer to individuals who achieve developmental milestones at an age-appropriate time without experiencing social problems. Age-appropriate achievements for children and youths can refer to positive school adjustment and peer relationships. On the other hand, some researchers focusing on psychopathology tend to define the positive adjustment as an absence of psychopathology or a low level of symptoms and impairment (e.g. Peisah, Brodaty, Luscombe, & Anstey, 2000). Internalizing symptoms (depressive symptoms and anxiety) and externalizing symptoms (conduct problems and/ or criminal behaviors) are often used in studies of children of a parent with a severe mental illness including Major Depression

(Conrad & Hammen, 1993; Radke-Yarrow & Brown, 1993). Still other researchers include both kinds of criteria (Garber & Little, 1999; Masten, 2001; Tiet, Bird, Hoven, Wu, Moore & Davies, 2001). In this study, the term positive adjustment was used, and included both kinds of criteria for positive adjustment. For detailed information please see Chapter 3.

Youths and Children

The focus of this study is offspring who have a parent with depression and face multiple risks. The term *youths* was primarily used when referring to the children ages 10 to 14 years old, from the developmental perspective, this age group is straddles childhood and early adolescence (Hutchison, 2008). The word *children* could mean sons or daughters or young individuals who are below a specific age (Aldridge & Becker, 2003; Allen-Meares & Fraser, 2004). For example, the word children has been used for persons under the age 14, 16, or 18 by different legal systems (Oxford reference online, 2009a). From the developmental perspective, the term children refers to individuals who are under 13 years old (Hutchison, 2008). *Adolescence* refers to an individual who is developing into an adult and the person is about 11 to 20 years old (Oxford reference online, 2009b). However, the cutting point for children and adolescence varies by different systems (e.g. legal and social service systems) and cultures (Allen-Meares & Fraser, 2004). There does not seem to be any consistency with use of the term youths and adolescents in the literature. Hence, for the literature review of this study, the terms children, youths, and adolescence were retained as the author(s) had used them.

Knowledge Gaps

Research Design Issues

Research findings about protective factors for disadvantaged children in some past quantitative research may not be stable because of the limitations due to small sample size, cross-sectional design, and an insufficient respondent source (see Carbonell, Reinherz, & Giaconia, 1998; Garber, & Litter, 1999; Radke-Yarrow, & Brown, 1993). Moreover, few of these previous studies were conducted in rural areas (Fraser, James, Anderson, Lloyd, & Judd, 2006; Sawyer, Gale, & Lamber, 2006). Hence, the external validity of current protection information resulting from research samples in urban areas could be limited.

Quantitative research with a small sample is more likely to violate statistical assumptions and produce unstable results (Rubin & Babbie, 2005; Tabachnick & Fidell, 2001). In addition, cross-sectional design does not allow researchers to determine the extent to which a variable is antecedent, concomitant, or the consequence of another variable (Rubin & Babbie, 2005).

Furthermore, Fraser and Luthar have suggested that the examination of resilience constructs is essential for advancing research in this field (Fraser, Richman, & Galinsky, 1999; Luthar, & Zelazo, 2003). In addition to conducting a study within a relatively clear conceptual framework, methodological design is crucial for examining resilience constructs. Resilience researchers suggest using a longitudinal research design to clarify the cause-effect relationship among different factors (Fraser, Richman, & Galinsky, 1999; Hann, Hawley, & Deal, 2002; Luthar & Zelazo, 2003; Rutter, 1985; Tiet, Bird, Hoven,

Wu, Moore, & Davies, 2001; Waller, 2001). However, because of the cost involved in conducting a longitudinal study, secondary data analysis seems to be a feasible approach to balance the cost and the growing requirement of using longitudinal data in resilience research (Hammen & Brenna, 2001; Kahn, Brandt, & Whitaker, 2004). This dissertation also used secondary data analysis. The detailed information of the secondary data is addressed in Chapter 3.

Protective Factors from Various Systems

Past studies in this area are also limited by testing a narrow scope of protective factors and producing the insufficient information that is currently available about the protective effect (Fraser, Richman, & Galinsky, 1999; Luthar & Zelazo, 2003; Tiet, Bird, Hoven, Wu, Moore, & Davies, 2001). Early studies only focused on individual characteristics (Luthar, D'Avanzo, & Hites, 2003; Walsh, 2003). This approach is criticized because it misleads people to think that those who do not achieve positive adjustment under adversity do so because of personal weakness (Walsh, 2003). This approach also neglects these families' potential strengths which may help their children achieve positive development (Wolin & Wolin, 1993). More recently, there has been increasing interest in exploring protective factors by using a broader framework. However, most studies only focus on the dyad or triad relationship of family systems, especially main caregivers' influence and family functioning (e. g. Beardslee, Versage, & Gladstone, 1998; Brennan, Brocque, & Hammen, 2003; Connell, & Goodman, 2002; Rutter, 1990a; Tiet, Bird, Hoven, Wu, Moore, & Davies, 2001). Protective factors like neighborhood and school have rarely been examined although an array of researchers

have suggested that various risk factors from an ecological context may link to adolescents' maladjustment (see Brody et al., 2001; Conger, et al., 2002; Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004; Simons, Simons, Conger, & Brody, 2004).

Interactive Effects between Protective and Risk Factors

Protective factors of quantitative resilience research have been examined in two ways: additive models¹ and interactive models² (Fraser, Richman, & Galinsky, 1999; Luthar, Cicchetti, & Becker, 2000). Although resilience researchers have suggested applying the interactive model in research design, relatively few social work studies in this area use the interactive model (Fraser, Richman, & Galinsky, 1999; Luthar & Zelazo, 2003). The relatively unstable and small effect of interactive effect and the difficulty in explaining interactive effects may, in part, prevent resilience research from using an interactive model (Smokowski, Mann, Reynolds, & Fraser, 2004). Examining the interactive effect of risk and protective factors (the interactive model) is crucial to improve social work research and practice (Fraser, Richman, & Galinsky, 1999). For instance, in family-centered practice and social support related literature, parental monitoring and support have been viewed as the most important influence on children's development (Nichols & Schwartz, 2009).

¹ In the additive model, the presence of protective factors is assumed to directly increase the probability of positive outcomes despite the risk conditions (Luthar, Cicchetti, & Becker, 2000).

² In the interactive model, the effects of protective factors need to take risk effects into account. In other words, the protective effect varies by risk conditions. Three possible relationships between risk and protective factors are: 1) protective-stabilizing, 2) protective-enhancing, 3) and protective reactive (Luthar, Cicchetti, & Becker, 2000).

However, there is insufficient knowledge regarding whether the family-related protective effect varies by the level of family-related risk. Moreover, another important question for helping professionals to ask is what would be the next most powerful protective factor if the influences of parenting and primary caregivers' support become weak. The clarification regarding the protective effect under different risk effects is important for developing effective intervention programs and addressing relevant policies. Hence, this study explored the interactive effect of risk and protective factors.

Robust Protective Factors

Despite the fact that many studies investigate protective factors for disadvantaged populations, few studies systematically examine factors that have a wide range of protection on multiple domains of youths' developmental outcomes. Protective factors with a wide range of protection were referred to, in this study, as robust protective factors. Knowledge about robust protective factors can guide helping professionals to decide which protective factors should be promoted first if the service resources are limited, especially in the time of a declining economy and restricted funding for social services.

Many studies have focused on the association between protective factors and different kinds of risk factors, and have suggested that some protective factors may have wide reaching effects on different kinds of risk while some protective factors only operate within specific risk contexts (e.g. Cornard & Hammen, 1993; Tiet et al., 2001). For instance, both research teams, Cornard et al. (1993) and Tiet et al., (2001) investigated the association between different risk factors and a set of protective factors.

Comparing nonresilient and resilient children (children who had no psychiatric illness and had good competence) in two-risk circumstances, Tiet et al. (2001) concluded that high IQ was a protective factor for both risk circumstances, and that gender (girl) was a protective factor for one risk circumstance-having a parent with depression, but not for the other risk circumstance-experiencing negative life events (measured by disturbed parenting). On the other hand, Cornard and Hammen (1993) concluded that a mother with good social competence and a healthy father at home were protective factors for children of a mother with Unipolar Disorder. However, these two factors are associated with the increasing maladjustment of children of a parent with Bipolar Disorder. Cornard and Hammen (1993) argued that these unexpected findings may result from the different meanings about mother's social competence and a healthy father at home in two different risk contexts (bipolar family and depression family). For example, "good" social competence for a mother with Bipolar Disorder may present a signal of a manic episode while a healthy father at home may mean that a father needs to stay at home to take care of his children and is not able to work and generate income to home when the other parent is unable to do so. Although Cornard's research team may be unable due to their small sample size, both Cornard's and Tiet's research teams' findings actually correspond to Rutter's idea (1990) that variables may only act as protective factors in specific contexts.

Few studies examine which protective factors may have a broad range of protection for improving more than one domain of positive adjustment, or for reducing more than one domain of maladjustment. Langrock and colleague (2002) used a path analysis with a

sample of 101 children aged 7-17, they reported that children adjusting their thinking to make themselves feel better was a key mediator for reducing the association between parental depression related stressors (inept parenting and marital conflict) and child internal behavior problems, and with external behavior problems (Langrock, Compas, Keller, Merchant, & Copeland, 2002). Although their study has many strengths, it only focuses on children's coping strategies. Other important protective factors related to these children's development, such as the characteristics of family and community, are not included in their model.

Another study with a secondary data analysis design (N=1,539), examined longitudinal relationships among childhood risk and protective factors and three adjustment domains in adolescence (fewer juvenile court petitions, lower rates of depression, and high school enrollment)(Smokowski et al., 2004). Researchers reported that some protective factors (e.g. exhibiting shy or anxious behaviors during grades six and seven, and participating in intervention services) have a broad range of protection across developmental domains. The study, however, did not focus on youths of a parent with depression.

The clear identification of protective factors including robust protective factors is crucial for the development of good cost-effective intervention programs. When social workers better understand the relationship between risk and protective factors, they are more likely to efficiently select and incorporate the most powerful protective factors when designing intervention programs. Thus, this study explored robust protective factors, as well as the relationship between risk and robust protective factors.

Research Aims

To address the above knowledge gaps, this study has the following three aims:

- Aim 1: To explore the association between ecological protective factors and four outcomes- Emotional Adjustment, Behavioral Adjustment, School Performance, and Educational Aspiration- in youths who have multiple risk factors (having a parent with depressive symptoms, facing financial stress, and living in a disorganized community).
- Aim 2: To identify the robust protective factors for these target youths.
- Aim 3: To explore the interactive relationships between risk and robust protective factors.

To address the above knowledge gaps and achieve these three research aims, this study analyzed related variables from an existing longitudinal data set, Family and Community Health Study (FACHS), which included various ecological risk and protective factors. Detailed information of FACHS is provided in Chapter 3.

Significance of this Study

Given the essential goal of social work is to improve the quality of social environments and to promote the well-being of individuals, particularly vulnerable populations, social workers should make efforts to develop effective programs and policies to help minimize the negative influences of depression. Depression has been known as one of the most prevalent illnesses across individuals' life course (SAMHSA, 2007). In addition to a biological risk factor, a broad range of psychosocial stress could contribute to individuals' depression in different developmental periods (Aldridge & Becker, 2003; Hammen, 2003). Daily hassles and typical life transitions could contribute

to the symptoms of depression. Individuals who have been exposed to chronic stress such as poverty and experienced trauma may experience several severe depressive episodes through her/his lifetime (Focht-Birkerts & Beardslee, 2000). For example, soldiers' depression or post traumatic symptom disorder (PTSD) may gradually develop within the war period and then erupt after they return to their families (Goff, Crow, Reisbig, & Hamilton, 2007).

The cost and the loss that a family with a member with depression faces is unaccountable. Severe depressive symptoms not only greatly damage individuals' functioning in social roles and bring great financial and emotional burden to their families but also highly increase their offspring's risk of developing maladjustments. Moreover, depression also raises social cost both by decreasing productivity and increasing the cost of (mental) health and social services (Marsh, 1998). The negative effect of depression along with other antecedents or co-occurring risk factor such as poverty, weak social support, and neighborhood disadvantage could make some high-risk families more vulnerable (Garber, 2005; Hammen & Brenna, 2001). For example, when the parent with depression returns from a war, her/his child who may have experienced unstable and lonely life due to the frequent moving and absence of a parent, may face additional stress including financial loss, conflictual family relationships, and hardship parenting (Goff, Crow, Reisbig, & Hamilton, 2007).

To provide effective prevention and intervention services to children reared in a family with a parent experiencing depression and facing multiple risks, the knowledge about protective factors for this target population is important (Fraser, Richmond, &

Galinsky, 1999). Although a growing body of literature has suggested some protective factors for these children, some knowledge gaps require further clarification. Specifically, research models of previous studies may not sufficiently reflect environmental circumstances for children in rural areas. Moreover, little information is available regarding robust protective factors and the interaction effect between risk and protective factors (Fraser, Richmond, & Galinsky, 1999).

Through this study, these above knowledge gaps were addressed to some degree. Hence, findings of this study contribute to the knowledge building of this research area, and may help researchers and practitioners better understand the circumstances of this target population. Research findings can be also applied to policy making to help ensure that specific resources are provided to best assist these children and their families, as well as to inform the development of evidence-based practice. For example, the research finding about robust protective factors can serve as empirical evidence that guides practitioners to decide which protective factor/resource/ personal asset should be first promoted through intervention/prevention programs to provide maximum protective effects for a target population in a time of restricted resources. Detailed information regarding implications of findings is provided in Chapter 5.

CHAPTER 2: LITERATURE REVIEW

A resilience framework was used to guide the literature review and build the research model. Because the resilience phenomenon is context- and process-oriented, risk and protective factors that contribute to the outcomes of children with a parent with depression will be addressed within an ecological and developmental context. Moreover, the factors that may contribute to these children's positive adjustment or maladjustment will be highlighted for this study's variables.

The Risk Contexts of Children Reared in Disadvantaged Environments

Studies suggest that children who have a parent with depression are at high risk for developing behavioral problems (Kahn, Brandt, & Whitaker, 2004), interpersonal problems (Hammen & Brenna, 2001), depression (Hammen & Brenna, 2003; Beardslee, Versage, & Gladston, 1998) and/or school maladjustment (Conger et al., 2002). As Rutter (1990) argued, risk factors related to depression seldom present alone. Pile-up stressors or what Wachs (2000) called covariate risks often come together to threaten a family when a parent has depression. More recent studies on the development of these children have applied a broader ecological framework to examine the circumstances of these children and suggested that bio-psycho-social risk and protective factors all play a role in the developmental outcomes of these children (Hutchison, Matto, Harrigan, Charlesworth, & Viggiani, 2007). Bio-psycho-social risk factors also increase negative transactions between these children and the systems with which they interact.

Generally speaking, risks occurring in a family system such as vulnerable biological inheritance, inept parenting, and child abuse, tend to be viewed as proximal risk sources that contribute to these children's maladjustment (Germain, 1994; Wachs, 2000). In contrast, risks occurring in a community and/or political-social-cultural systems such as disorganized communities and minority status are often viewed as distal risk sources that increase the probability of maladjustment. First the effects of proximal risks are discussed, followed by the effects of distal risks.

Proximal Risks on the Children of a Parent with Depression

Biological-related studies report that children of a parent with depression are not only more likely to experience depression before adulthood, but also their depression is more likely to be more severe and recurrent than those of non-depressed parents (Hammen, 2003; Weissman et al., 2006). Psycho- and social -related studies on this area are often guided by attachment theory, social learning theory, social control theory, and/or communication theory. The ecological perspective guides researchers to consider context and the possibility that factors other than, or in addition to, the negative characteristics of the ill parent and the negative parent-child interaction, might cause these children's maladjustment (Bandura, Ross, & Ross, 1963; Goodman & Brumley, 1990; Hammen, 1991; Hammen & Brennan, 2003; Nichols & Schwartz, 2009). They explore how the transactions within subsystems of a family, and/or the transactions between a family and its outside systems may affect the development of these children. In this perspective, a parent with depression is no longer viewed as the only potential risk factor contributing to their children's maladjustment (Marsh, 1998). These other negative

factors that may affect these families in emotional, cognitive, and structural aspects are discussed below.

Family Emotional-Related Risk Factors

Either the extreme expression of overwhelming emotions or the extreme oppression of the existing negative emotions will lead to a family's disequilibrium (Focht & Beardslee, 1996; Nichols & Schwartz, 2009). On the one hand, depressive symptoms and social stigma associated with mental illness may not only negatively reshape the ill parent's characteristics, but also may bring this family shameful, fearful, and even angry feelings (Marsh, 1998). Many studies have found that a mother with depression is less likely to express positive emotion or recognize her children's strengths, but is more likely to show her impatience, hostility, and criticism when she interacts with her children (Hammen, 1991; Lovejoy, Graczyk, O'Hare, & Neuman, 2000). In fact, research grounded in a broad ecological context has showed that mothers with depression are more likely to face more life stressors, especially increased interpersonal conflicts. These life stressors and the depressive symptoms may contribute to these mothers' inept parenting behaviors (Hammen, Shih, & Brennan, 2004). Hence, instead of criticizing these ill mothers, helping professionals should be aware that the unfriendly behaviors of these mothers may indicated that they are suffering from depressive symptoms and stressors related to depression (Thomas & Kalucy, 2003). An intervention for improving the well-being of children of a mother with depression should consider the needs and situations of the whole family, particularly the ill parent.

On the other hand, both clinical observations and empirical studies show that some parents hide their mental illness from their children, and/or forbid their children from expressing any fear, worry, and other negative feelings/emotions related to the family's stress in order to pretend that everything is going well as a "normal" family (Nichols & Schwartz, 2009). Since proximal environments often play the key role in cultivating children's capabilities in regulating their emotional and behavioral responses toward outside stimuli, a family filled with highly negative emotions or that avoids dealing with negative emotions is less likely to teach children how to express and manage their emotions appropriately (National Research Council and Institute of Medicine, 2000; Wachs, 2000). A possible consequence is that these children are more likely to disconnect themselves from their emotions and other people, or be overwhelmed by their negative feelings which in turn increases the incidence of emotional and behavioral problems (Monte & Sollod, 2003; Nichols & Schwartz, 2009).

Family Cognitive-Behavior Related Risk Factors

The interpretation of other people's behaviors often affects the way we respond to them, how we feel about our or their reactions, and how people react to our behaviors (Beck, 1995). A vicious circle of negative interpretations and reactive behaviors seems to be easily found in a family of a member with depression (Hammen, Shih, & Brennan, 2004). Cognitive family theorists argue that a family member with depression is more likely to negatively interpret outside environments and respond to environments inappropriately which in turn increases her/his difficulties with interpersonal relationships (Beck, 1995; Beck & Weishaar, 1989; Hammen, 1991, 2003). Although the

cause-effect relationship between depression and distorted cognitions may be vice versa, it is not unusual for practitioners to recognize that family myths and hurtful family beliefs, a format of negative family cognition, are key problems that get a family drawn into an ineffective problem-solving process (Chen, 2004; Fachts & Beardslee, 1996).

These negative myths and beliefs can be viewed as invisible stories co-created by family members (Fachts & Beardslee, 1996; Kelley, 1996). A family of a member with depression often co-narrates a hopeless life story built around the illness-related issues, and views this story as the truth. Children reared in such a family are more likely to develop negative schema through observing and then imitating their family members' behaviors. As a result, some children may develop various kinds of maladjustment because they often explain their experiences within a narrow and negative worldview and then respond to environmental demands inappropriately (Fachts & Beardslee, 1996; Osatuke et al., 2004; White & Epston, 1990).

Family Structure-Related Risk Factors

Dysfunctional family structures will greatly increase a family's distress especially when a family encounters a series of life stresses (Minuchin, 1974; Minuchin, Colapinto, & Minuchin, 2007). Dysfunctional family structure is shaped by the repetition of the family's interaction patterns composed of rigid family roles, inappropriate boundaries, and ineffective problem-solving patterns. The boundary which is between a family and its outside world greatly influences the amount of resources that a family may receive. Some families may terminate contact with other relatives and friends, or remain isolated from others because of stigma and discrimination (Marsh, 1998).

In a closed family system, children who have limited interactive experiences with other adults outside of family are greatly affected by an ill parent whose cognition, emotions, and behaviors have been impacted by depression. The consequence is that these children have few opportunities to understand a given event from different perspectives, to learn different problem-solving strategies, and to connect with other supportive adults and peers. These experiences are key elements to foster children's positive self-image and self-efficacy (Bandura, Ross, & Ross, 1963; Beck, 1995; Beck & Weishaar, 1989; Hammen, Shih, & Brennan, 2004; Hutchison, 2008).

Within a family system, inappropriate boundaries, power dynamics, and interactive patterns may enhance tension among family members. For example, inept parenting such as a lack of support and monitoring has been viewed as a contributing factor to the maladjustment in children of a parent with depression (Kim et al., 2003; Mordoch & Hall, 2002; Oyserman, Mowbray, & Meares, 2000). Furthermore, negative triangle relationships in a family are considered risks for children's development (Minuchin, 1974; Minuchin, Jorge, & Minuchin, 2007; Nichols & Schwartz, 2009). A classic example of a family triangle relationship is when the behavior of a super child or a troubled child tries to mask or compensate for their parents' marital crisis (Nichols & Schwartz, 2009).

Studies and practice observations consistently show that children of a parent with depression may become the victims of their parents' conflicted relationship which is highly associated with a woman's depression (Seifert, 2003; Zahn-Waxler, Duggal, & Gruber, 2002). One parent may use the child against the other partner, or both parents

tend to become over involved in the child's life in order to avoid facing their marital problems (Nichols & Schwartz, 2009).

However, depending on each family's situations and their cultural norms, a parentified child may suggest inappropriate family hierarchical structure/power arrangement (Nichols & Schwartz, 2009). In some disadvantaged families, parentified children who assume the role of substitute parent play an important role contributing to their family's positive adjustment. For example, the elder children in a single-parent African American family are often expected to take care of the younger siblings when the adults are at work (Aldridge & Becker, 2003). Some parentified children, in certain aspects, may be viewed as resilient children. These parentified children may not only need to take care of their young sibling and the ill parent, undertake domestic duties and nursing tasks (e.g. encourage the ill parent to take medicine and eat), but also help support the family financially.

Nevertheless, it is important to be reminded that resilient children are not necessarily free from the negative impact of the stress in their lives. Research shows that resilient children may have experienced emotional distress under a series of stressors (Luthar, 1997). Polkki, Ervast, and Huupponen pointed out that these "resilient children" were somewhat "lonely and helpless with their rainbow of emotion" (2004, p.160). It shows us that beneath the mask of "successful survivors", their inner world may not be understood as well as their external behaviors suggest. In other words, some of these parentified children may be at-risk of developing emotional maladjustment. These children's age-related developmental needs may be disguised by their good behavioral

functioning which, in turn, may become a potential risk for later maladjustment (Aldridge & Becker, 2003; Polkki, Ervast, & Hupponen, 2004).

Distal Risks on the Children of a Parent with Depression

The risk factors related to parental mental illness may derive from macrosystems (e.g. social discrimination towards individuals with mental illness and poverty) and exosystems (e.g. community quality). These risks may affect children's developmental outcomes through creating a negative family climate, living in a disorganized neighborhood, and providing less available resources and opportunities for positive growth (Aldridge & Becker, 2003; Bronfenbrenner, 1979; Germain, 1991, 1994).

It has been long recognized that poverty is associated with individuals' poor health and mental health conditions (Aldridge & Becker, 2003). A report of Substance Abuse and Mental Health Services Administration (SAMHSA, 2008) stated that people in the low socioeconomic status (low level of income, education, and occupation) are 2-3 times more likely to have psychosocial distress and develop mental illness compared to those in higher level of socioeconomic status. A review by Samaan (2000) regarding the relationships of poverty, race, ethnicity, and mental health also suggested that children whose parents are in poverty or who have experienced severe economic losses are more likely to report having higher rates of depression, anxiety, and antisocial behaviors.

Poverty disparity among ethnic groups in United States also, in part, explains the relatively higher rate of mental illness for some ethnic groups. U.S. Census data (2008) showed that, in 2007, Non-Hispanic Whites had the lowest poverty rate (8.2 %) whereas Asians (10.2 %) and Hispanics (21.5 %) were in the second and third, and Blacks (24.5%)

were the poorest. A survey of 2,046 youths concluded that the incidence of depression for African American youth is 2 % to 4 % and for Mexican American youth is 5 % to 7 % higher than Caucasian youth (DeNavas-Walt, Proctor, Smith, & U.S. Census Bureau, 2008). When the factor of socioeconomic status was controlled, the differences in mental health problems among ethnic groups become insignificant (Samaan, 2000).

The effect of economic stress upon children's developmental outcomes is profound, because it affects the quality and quantity of support that parents provide to their children (Hammen, 2003; Hans, 2005; Mordoch & Hall, 2002). Financial hardship may increase family conflict between primary and secondary caregivers which, in turn, creates a negative family atmosphere related to their children's emotional distress and behavioral problems (Conger et al., 2002). Financial stressors not only increase psychological distress of parent(s), consume parent(s)' time and energy in making ends meet but may also decrease parent(s)' capacity for positive parenting and educational support to their children (Aldridge & Becker, 2003; Gutman & Eccles, 1999). Higher poverty rates in African Americans and Hispanics may explain, in part, why relatively few African Americans and Hispanics 25 years old and over gain a high school diploma compared to Non-Hispanic Whites (83 %, 62.3%, and 91.5 % respectively) and far few African Americans and Hispanics gain a college degree than Non-Hispanic Whites (20 %, 13.3 %, and 32.6 %respectively) (U.S. Census Bureau, 2008).

Moreover, financial hardship limits families' choices in living environments which could be another stressor to some families. Poorer neighborhoods are often associated with higher rates of violence and fewer available resources to residents such as

educational, recreational, transportation, and day care-related resources (Aldridge & Becker, 2003; SAMHSA, 2008). Children of these poor families may have more frequent exposure to violence and gangs activities in their neighborhoods increasing their emotional distress and behavioral problems (Brody et al., 2001; Cutrona et al., 2005; Simons et al., 2004). In addition to the increased psychological distress and behavioral problems, research has shown that poorer neighborhoods adversely impact children's academic achievement (Gonzales, Cauce, Friedman, & Manson, 1996). Hence, for some children, chaotic living environments associated with illness and poverty may be the major risk factor contributing to their maladjustment.

The Various Effects of Parental Depression on Children

There is a great deal of individual difference in the negative outcomes among children of a parent with depression (Garber, 2005; Hammen, 1991). Some children are more likely to show emotional problems (e.g. depression and anxiety); other children are more likely to develop conduct problems; and still other children tend to have interpersonal difficulties and academic failures (e.g. Hammen & Brenna, 2001; Kim et al., 2003; Peisah, Brodaty, Luscombe, & Anstey, 2000; Radke-Yarrow et al., 1992). The various risk contexts within families of a parent with depression may partially explain the difference of children's outcomes. The characteristics of the depression (e.g. chronicity, severity, onset time, and comorbidity symptoms), the resources of families (number of caregivers at home and the relationship quality between primary and secondary caregivers), and the attributes of the children create different risk contexts (Beardslee, Versage, & Gladstone, 1998; Seifer, 2003). Some of these factors could function as

protective factors to buffer or reduce the risk effects (detailed information about protective factors will be discussed later).

Furthermore, the effects of parental depression may vary by children's developmental stages, explaining, in part, the different outcomes in children who have a parent with depression (Hops, 1992; McCubbin, Thompson, & McCubbin, 1996). Infants and toddlers in these families tend to have difficulties in forming attachments; elementary-aged children tend to have low self-esteem and have self-blaming styles about their frustration (Hops, 1992; Seifer, 2003; Zahn-Waxler, Duggal, & Gruber, 2002). These children tend to be less socially and/or academically competent. The worrisome issue is that the maladjustment in early developmental stage also increases these children's challenges to achieve later developmental-related goals (Hutchison, 2003; Seifer, 2003). For example, infants' attachment problems may affect how they get along with peers in the school-aged period, and how they build an intimate relationship in adulthood.

Gender behaviors reflecting biological differences and cultural expectations also play key roles in explaining the various developmental trajectories among these children (Kindlon & Thompson, 1999; Smokowski, Mznn, Reynolds, & Fraser, 2004; Tiet, Bird, Hoven, Wu, Moore, & Davies, 2001). Girls are more likely to be raised in environments which foster their sensitivity, caring, and emotional expression while environments encourage boys to show their assertiveness, athleticism, and bravery (Kindlon & Thompson, 1999). Research also consistently shows that some specific risks related to internalizing symptoms (depression and anxiety) are easily identified in girls such as

being concerned with interpersonal relationships, being vulnerable to interpersonal conflicts, and ruminating about negative events.

Summary of Risk Effects

In summary, emotional, cognitive, and structural aspects of families with a parent experiencing depression may increase children's vulnerability to maladjustment.

Furthermore, various risks related to having a parent with depression, particularly poverty and living in a disorganized neighborhood, appear to be interrelated and may contribute to the maladjustment for these children. Since it is more likely that multiple risk factors, rather than parental depression itself, contribute to these children's maladjustment, this dissertation research included financial stressors and disorganized neighborhood as risk factors in research models.

On the other hand, the characteristics of depression, the availability of resources of families and children's characteristics (e. g. children's developmental stages and gender) may impact the extent to which parental depression links to child maladjustment. Hence, this study only focused on early adolescents who had a primary caregiver with a life time diagnosis of depression, and proposed controlling for gender and having a secondary caregiver at home.

Moreover, previous literature showed that children of these families may develop many types of maladjustment, indicating possible comorbidity (e.g. depressive symptoms and conduct disorder symptoms). Or some children may show positive adjustment in only one developmental domain but have severe problems in another (e.g. good school performance but negative emotional adjustment). Hence, it is necessary to understand the

well-being of these children through assessing multiple developmental domains rather than one single developmental domain. This study included three developmental domains-emotional, behavioral, and school outcomes-to reflect target youths' developmental tasks at their age and favorable outcomes related to parental depression. Detailed information is provided in Chapter 3.

The Protective Contexts of Children in Disadvantaged Environments

Resilience researchers believe that protective factors/mechanisms not only can be identified from individuals' inheriting characteristics, but also from different ecological systems with which these children interact (Fraser, Richman, & Galinsky, 1999; Luthar, Chiccetti, & Becker, 2000; Masten, 2001). Reviewing studies on high-risk children/youths, Garmezy (1993, 1994) addressed three kinds of protective mechanisms which paralleled different ecological systems including individual attributes, family characteristics, and social support outside the family. Guided by Garmezy's ideas, protective factors were categorized into three system levels: individual, family, and community.

Two issues should be noted in understanding these protective factors. First, for simplicity, this study discussed each factor's influence separately. However, when considering the influence of one specific protective factor on a target population, one should also be aware of the influence of other relevant factors. The reason is that the resilience perspective is influenced by developmental and ecological perspectives that emphasize interrelated relationships among factors and how the change over time. For this reason, other relevant factors were noted when discussing one unique factor's

influence. For example, parenting information is also mentioned in the section of children's self-regulation capability.

Second, a broad range of literature regarding children reared in disadvantaged/risk environments was used to enlighten this study including: single-parent families; families with a member with mental illness or chronic illness; low income families; and families in a community with a high deviance rate. The reason was that this dissertation was an exploratory study and only few previous studies completely matched this study's primary focus--protective factors for children of a parent with depression and facing multiple stressors.

Protective Factors at the Individual Level

Protective factors at the individual level refer to the children's capability, skills, and (inherent) characteristics which help them cope with the stressors related to their parent's illness. Studies show that children who have the capacity or characteristics (e.g. easy going and less shy, self-regulation, self-control, and optimism) to soothe themselves when they feel sad, to control their temperament and behavior when they feel angry, and/or to minimize the distress when they feel stress, are more likely to adjust to stressors (Garber & Little, 1999; Kliewer et al., 2004; Langrouck et al., 2002; Tiet et al, 2001). Important individual protective factors/mechanisms including temperament, optimism, self-regulation, coping strategies and culture valued activities are discussed below.

Temperament

Temperament refers to the way that individuals consistently interact with the world around them (Garber, 2005; Wachs, 2000). Although the basic temperamental patterns may reflect genetic influence and show some stability over an individual's development, the intensity of temperament styles tends to be modified by one's experiences (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Craig & Dunn, 2007; Wachs, 2000). Some researchers simply categorize temperaments as easy going, difficult, and slow-to-warm-up (negatively reacting to new stimuli but often successfully adjusting to new situations), while others include multiple dimensions of temperaments activity level, attention and persistence, and distress level (Collins et al., 2000; Craig & Dunn, 2007; Rothbart, Ahadi, Hershey, & Fisher, 2001; Wachs, 2000).

Researchers with a socialization perspective argue that it is not the temperament itself but the matching between children's temperament styles and their environmental characteristics that determine the children's adjustment outcomes (Craig & Dunn, 2007; Wachs, 2000). Children whose temperaments match the demands and values of their environments (e.g. family and school) demonstrate better adjustment to their environment (Mobley, 1991). The socialization perspective is supported by some research (e.g. Jeanne, 2001; Mobley, 1991).

For children who have a parent with mental illness, empirical evidence tends to suggest that children who were sensitive to new stimuli (negative mood) were more likely to report internalizing symptoms (depression and anxiety) in that these children have more wariness, physiological arousal, and emotional distress (Garber, 2005). In

contrast, children who are less shy or have an easy going temperament are more likely to achieve positive developmental outcomes (Radke-Yarrow & Brown, 1993; Werner, 1993). It is possible that these well adjusted children's temperaments drive their attention to more positive situations, elicit other people's positive reactions, and/or these children tend to actively connect with supportive adults and make friends with others which, in turn, may attenuate stress they face (Wachs, 2000).

For older children and adolescents, the impact of individual characteristics of attention and persistence seems to increase, especially in school settings which expect students to complete specific tasks. Some research reports that teachers are more likely to react positively to children with high task orientation than children with poor task orientation (e. g. Ballantine, 2001; Mobley & Pullis, 1991). In contrast, the characteristic of poor task orientation and other types of difficult temperament (e.g. inflexibility, withdrawal) may enhance the negative impact of life events (e.g. family discord) on children's behavioral and emotional development (Davie & Windle, 2001; Legua & Klein, 1996). Although some research has shown that temperament plays a key role in children's adjustment, there is no evidence to demonstrate that specific temperament could be a robust protective factor for youths of a parent with depression symptoms and facing multiple stressors.

Optimism

The term *dispositional optimism* initially used by Scheier and Carver (2001) refers to "a generalized positive outcome expectancy" (p.913), and has been broadly used in many optimism research (Geers & Wellman, 2009; Ruthig, Perry, Hall, & Hladkyj, 2004).

For simplicity, this study used the term *optimism* indicating that individuals expect good things will happen to them (Ruthig, Perry, Hall, & Hladkyj, 2004).

The positive effects of optimism on (mental) health are well documented (Ek, Remes, & Sovio, 2004). Many researchers concluded that under the great pressure of chronic and severe illness, optimists report less daily stress and depression, and feel more relief after surgery and satisfaction with the medical care (Carver & Gaines, 1997; Lauver & Tak, 1995; Scheier et al., 1989). In addition, research shows that optimism also promotes good health behaviors in low-risk individuals (Carver & Scheier, 2002; Geers & Wellman, 2009; Hirsch, Wolford, LaLonde, Brunk, & Parker-Morris, 2009).

Furthermore, optimism is associated with lower levels of internalizing behaviors (depression, anxiety) for youths in various kinds of risk conditions (Bennett, Snooks, Llera, Vogel, Conklin, & Varlotta, 2008; Hirsch, Wolford, LaLonde, Brunk, & Parker-Morris, 2009; Puskar et al., 1999; Tusaie-Mumford, 2002). For example, in an early study focusing on youths who lived in rural areas with restricted mental (health) and financial resources, Puskar et al. (1999) concluded that optimistic youths showed less negative emotions (depression and anger) and used more problem-focused strategies when facing challenges. Later, Tusaie-Mumford (2002) re-analyzed the same data, and concluded that youths' optimism and family support were the most influential factors in these rural youths' positive adjustment.

Like the positive effect of optimism on adults with illness, studies also support that optimism contributes to young patients' positive adjustment. For example, a study with a sample of 87 families (children aged 7-18 years) intended to identify the risk and

protective factors that were related to the internalizing symptoms of a child with cystic fibrosis (Bennett et al., 2008). Researchers concluded that children who had more optimism traits have fewer symptoms of anxiety and depression.

Another recent study examined the influence of optimism on college students' adjustment (Hirsch et al., 2009). Based on 138 volunteers from a rural eastern college, this study suggested that an optimistic explanatory style was a key factor that reduced students' thoughts of suicidal ideation related to negative and potentially traumatic life events. This study also found that college students' optimistic explanatory style had a greater influence upon potential negative life events compared to students' depression and hopelessness.

In short, the positive effect of optimism on (mental) health has been recognized (e.g. Cutrona et al., 2000; Hutchison, Matto, Harrigan, Charlesworth, & Viggiani, 2007). Findings from the previous studies also suggested that optimism is a strong protective factor for at-risk youths' emotional-related developmental outcomes such as depression and anxiety. However, there is not sufficient evidence to indicate that optimism alone can prevent youths' behavioral problems or promote academic outcomes.

Self-Regulation

Self-regulation generally refers to the capability to react to outside stimuli and to recover from the reaction (National Research Council and Institute of Medicine, 2000). Infants' early self-regulation capability can be viewed as a part of temperament (Wachs, 2000). The capability of self-regulation in early development is deeply affected by the children's relations with their caregivers (National Research Council and Institute of

Medicine, 2000). Young children learn how to manage their emotional and behavioral responses toward outside stimuli, and how to focus on the current tasks through receiving comfort, coaching, and even neglect or punishment from their caregivers (Cole, Martin, & Dennis, 2004; Wachs, 2000). In the developmental process, children continuously interact with different persons and then develop appropriate self-regulation capability based on their social and cultural norms such as anticipating others' emotions, adjusting their behaviors according to different situations, and even hiding emotions from others (Craig & Dunn, 2007).

Self-regulation has been viewed as an important protective factor for disadvantaged children's positive adjustment (e.g. Brody, Murry, Kim, & Brown, 2002; Kliewer et al., 2004; Moilanen, 2006; Wachs, 2000) although there does not appear to be consensus in the literature concerning definitions and measurement of self-regulation. Theoretically, self-regulation embraces different regulating capacities such as emotional, behavioral, and attention regulation (National Research Council and Institute of Medicine, 2000). The procedure of individual self-regulation may involve goal-driven related psychological and behavioral activities and a delay of pleasure (Karoly, 1993; Strayhorn, 2002). Empirically, different researchers use various kinds of self-regulation scales and may only include one aspect of self-regulation in their research model. For example, Kliewer's research team focuses on emotional regulation (Kliewer et al., 2004) while other research focuses on behavior-attention related self-regulation (Kim & Brody, 2005; Moilanen, 2006).

In addition to different aspects of self-regulation, the term self-regulation seems to be somewhat confounded with the terms self-control and self-monitoring (Behncke, 2008). Baumeister and Vohs (2004) argued that the concepts of self-regulation and self-control are different explaining self-regulation includes both conscious and unconscious processes which affects individuals' self-control mostly at a conscious level. However, when this literature review was conducted, there was no consensus about the difference between self-regulation and self-control. Hence, the following only includes research in which the term self-regulation is used.

As mentioned earlier, an individual's proximal environment greatly affects his or her development of self-regulation. Research has consistently showed that particular types of parenting (e.g. authoritativeness, parental monitoring, and nurturing-involvement parenting) are associated with good self-regulation capacity of children in disadvantaged environments (Brody, Murry, Kim, & Brown, 2002; Moilanen, 2006). On the other hand, an individual's self-regulation capability is not always passively shaped by her/his environments, and the idea that a reciprocal influence between a child and her/his parents is also supported. Brody et al. (2002), for example used a structural equation model with a sample of 227 single-parent African American families to demonstrate that parenting (high levels of monitoring with supportive, involved mother-child relationship) contributed to children's adjustment through children's self-regulation. In another study, a five-wave model with a sample of 139 single-parent African American families showed that parenting at wave three indirectly affected children's internalizing and externalizing behaviors at wave five through youth self-regulation at wave four (Kim & Brody, 2005).

Research on low-risk populations also shows that children's positive self-regulation helps them achieve age-appropriate developmental outcomes. For instance, using different grade levels of students (n=169) and their parents (n=79) from a small Midwestern school district, Moilanen (2006) explored how parenting practices and these youths' self-regulation (long-term and short-term self-regulation) affect youths' adjustment outcomes. This study found that youths who had better short-term self-regulation (e.g. impulse control) were associated with lower levels of internalizing behavior problems and higher school grades, while youth who had higher levels of long-term self-regulation (e.g. regulating toward goals) were associated with fewer externalizing behaviors, higher levels of prosocial behavior, and higher educational goals and school grades.

Individuals' positive emotional self-regulation capability may also protect them from the negative influence of the exosystem (e.g. community quality). Kliewer et al. (2004), for example, used an ecological framework to examine factors representing different ecological factors that could protect youth from developing internalizing and externalizing behavior problems associated with exposure to community violence. They concluded that children's emotional regulation skills, caregivers' regulation of anger, and child perception of caregivers' acceptance protected these children from developing internalizing problems. However, among these three factors, only caregivers' acceptance prevented these children from developing externalizing problems.

Based on previous studies, self-regulation has been associated with children's developmental outcomes. Findings of these previous studies seem to indicate that,

depending upon how self-regulation is measured the focus of developmental outcomes, self-regulation can function positively in a specific developmental domain or across different domains. Given this was an exploratory study and to help clarify these conflicting findings, this study attempted to examine whether self-regulation could be a robust protective factor for this study's target youths.

Coping Strategies

Coping strategies refer to one's unconscious/conscious response to stressors. Stress responses can range from behavioral (e.g. taking actions to deal with stressors or withdrawal), psychological (becoming excited or anxious), cognitive (positive thinking or rumination), and physical response (nervous arousal) (Beck, 1995; Langrock et al., 2002).

As Rutter (2006) argued, protection may derive from what people do to deal with adversities in a dynamic process. Using coping strategies flexibly according to the change of stressful contexts can prevent individuals from getting stuck in stressful events that may result in another stressful outcome. For example, Langrock et al. (2002) examined whether children's coping strategies mediated the relationship between family stressors (inappropriate parenting related to parental depression) and children's emotional and behavioral outcomes. The research findings suggested that children who adjusted their behaviors and/or thinking patterns to cope with family stressors were less likely to develop depressive symptoms and aggressive behaviors than children who responded to stress with rumination and intrusive thoughts. Some longitudinal studies also suggest that flexible coping strategies benefit children in a high-risk family (a parent with a mental

health problem and children's experience of high stress) to achieve age-appropriate developmental outcomes (Garber & Little, 1999; Werner, 1993, 2005).

Furthermore, some researchers included an IQ test in their research models based on a pre-assumption that individuals with high intellectual capacities are more likely to use alternative coping strategies according to stress contexts (Wachs, 2000). This pre-assumption is not yet fully empirically proved and require further clarifications (Garber & Little, 1999; Radke-Yarrow & Brown, 1993).

Individuals' Culture Valued Activities

Literature has shown that individuals whose values, skills, and/or behaviors meet their social and cultural standards are more likely to develop positive self-concept and esteem correlated with positive outcomes (Canda, 2006; Fredricks & Eccles, 2005; Werner, 1993, 2005). When children devote themselves to cultural valued activities, they are less likely to be bothered by the life stressors which can not be controlled by their individual efforts. The process of focusing on the activity may not only calm them when they feel distress but also provides these children with an opportunity to build a sense of positive self-concept and have inner self-growth experiences. This process also reduces the likelihood of children engaging in problem behaviors (Jessor, et al., 2003; Rutter, 1990a).

Moreover, spirituality has been viewed as an important protective source for people with chronic illness, oppressed minorities, and dying persons (e.g. Canda, 2006; Frankl, 2006; Kovacs, Bellin, & Fauri, 2006). For African Americans, spirituality, grounded in their common cultural value, is "a nonmaterial higher force" that pervades all aspects of

their lives (Haight, 1998; Nasim, Corona, Belgrave, Utsey, & Fallah, 2007). The influence of spirituality includes, but is not limited to, individuals' religious beliefs and attending worship-related activities (Canda, 2006; Haight, 1998; Mosley-Howard & Evans, 2000). Research has reported that participation in church activities is an important coping strategy among female African Americans (Dressier, 1991 from Cutrona et al., 2000).

Although the importance of spirituality has been recognized by helping professionals (e.g. Cutrona et al., 2000; Hutchison et al., 2007), relatively little research focuses on spirituality as a protective factor for youths living in disadvantaged family and community. The existing literature suggests that religious beliefs and practices were protective against tobacco smoking for young female African American students in a predominantly White university (Nasim et al., 2007), and may be a protective factor for African American youths against suicide (Griffin-Fennell & Williams, 2006). However, there is not sufficient evidence pointing out those religious beliefs and/or related activities could be a robust protective factor for the target youths of this study.

Protective Factors at the Family Level

Protective factors at the family level in this study refer to the capabilities and resources which help the family face stressors (McCubbin, Thompson, & McCubbin, 1996). Walsh (2003) argued that each family had its strengths and resources to foster a child with competence even though a family faced great challenges which threatened its child's development. In general, a family's capabilities and resources may vary by the family's stage of development (McCubbin, Thompson, & McCubbin, 1996). However,

some capabilities and resources are critical to foster resilient children in a disadvantaged family regardless of developmental stages. These family resources included, but are not limited to, positive family communications, supportive relationships, and positive parenting practices (Garber & Little, 1999; Kliewer et al., 2004; Werner, 1993). Detailed information regarding these family protective factors is provided below.

Positive Communication and Supportive Relationships

Positive communication, broadly defined, includes appropriate emotional expressions (fear and hope, sadness and joyfulness) and problem-solving processes (Focht & Beardslee, 1996; Walsh, 2003). Some families can not discuss mental illness-related issues openly. In these families, members ignore the issues to prevent painful feelings. However, the consequence of this denial is to keep family members from dealing with problems together, which may create more myths regarding illness and underlying family conflicts (Marsh, 1998). To reduce unnecessary misunderstanding regarding mental illness and family conflicts, as well as to enhance family supportive relationships, many helping professionals (e.g. social workers, psychologists, and psychiatrists) have encouraged and helped positive communications among family members (Minuchin, 1974, 2007; Marsh, 1998)

Parents who appropriately express feelings and encourage children to talk about their worrying and fears rather than suppress emotions are more likely to elicit caring behavior and reduce unhealthy worries within a family (Focht & Beardslee, 1996; Landman-Peeters, et al., 2004; Walsh, 2003). Such communication helps broaden family members' cognitive repertoire about how illness and related stress affect the whole

family. In the process of expressing feeling, each family member is more likely to show their caring and to understand each other better which, in turn, enhances mutual understanding and supportive relationships. Research has consistently documented that a positive parent-child relationship is a key factor predicting children's behavioral and emotional outcomes (Garber & Litter, 1999; Paschall, Ennett, & Flewelling, 1996)

Moreover, through problem-solving communication, families are more likely to recognize the stressors they face and then to figure out how to cope with the stressors. Communication about what challenges a family faces is also more likely to reduce individual members' unhealthy guilty feelings, self-blaming attribution patterns, and misunderstanding of an ill parent's behaviors affected by depressive symptoms (Beardslee et al., 1993; Focht & Beardslee, 1996). Research and practice observations suggest that, under high stress, families which flexibly rearrange resources and family members' roles, and engage in more problem-solving discussions and actions are more likely to avoid continuum of risks with the functional deficit of the ill parent (Beardslee et al., 1993; Mosley-Howard, & Evans, 2000; Walsh, 2003). Although communication intervention has been broadly used in studying helping professionals, few studies directly explore the association between the intervention effect and children's adjustment outcomes in internalizing and externalizing symptoms and school adjustment. Given that communication interventions is popular in helping professionals, this exploratory study proposal to test the hypothesis that positive communication could be a robust protective factor for the target youths.

Parenting Style

A review by Rutter (1990) concluded that parenting styles of a parent with depression greatly affected a child's developmental outcomes. Research on single-parent families (Hartos & Power, 2000; Jones , 2005), poor families (Conger et al., 2002), and a high-violence community (e.g. Kliewer et al., 2006) also consistently report that effective parenting is an important protective factor for reducing youths' maladjustment such as substance use and emotional problems (Cleveland et al., 2005). Numerous studies have attempted to uncover what type of parenting best benefit children's development.

Baumrind's parenting theory has dominated this research field since the 1960s. She argues that authoritative parenting is the best approach to foster a child with good character and competences. Authoritative parenting practice blends highly demanding and highly responsive parental behaviors; thus, a parent directs her/his children's behaviors in a rational manner. In contrast, parents who exhibit extreme demanding and monitoring behaviors (i.e. authoritarian parenting) or extreme responsive behaviors (i.e. permissive parenting) are more likely to contribute to their children's maladjustment. Children who grow up in a family with permissive parenting tend to fail to overcome challenges, to be poor emotional regulators, and to have antisocial behaviors; while children in a family with authoritarian parenting tend to be highly anxious, withdrawn, unhappy, and have poor reactions to frustration (Baumrind, 1996).

Although Baumrind's theory was verified by many studies, some studies suggested that authoritative parenting may not be the best approach for some ethnic groups. Literature shows that authoritarian, controlling, or restrictive parenting, rather than

authoritative or supportive parenting, is more likely to contribute to Asian American children's positive school achievement, and prevent African American children's behavioral problems (Belgrave & Allison, 2006; Chao, 1994). For example, Paschall, Ennett, and Flewelling (1996) compare white (N=397) and black male youth (N=163) in the parenting effect on these youths' behaviors. This study concluded that supportive parenting promoted a parent-child attachment relationship and then reduced the incidence of violent behaviors in the white male youths, but supportive parenting can not decrease the violent behaviors in the black youths. The unique cultural values and historical contexts in each ethnic group may shape different meanings of these parenting concepts for these ethnic groups (Chao, 1994).

Within a traditional collectivist culture, Asian (American) parents tend to use physical punishment to make sure that their children's behaviors will not jeopardize their family's reputation and to help assure their children are accepted by a society (Ho, Rasheed, & Rasheed, 2004). In a racist society of the early American history, harsh parenting may be appropriate for African American parents because they need to teach their children to obey authoritative power in order to avoid making trouble which may lead to more serious harm for their children (Belgrave & Allison, 2006).

In addition to ethnic differences, it is important to note that the change of social context (the degree of social discrimination, and the degree of assimilation/acculturation of western ideas) also influences the effect of a particular parenting style on children's development. Recent literature on parenting mentions that physical punishment in African American and Asian families may no longer be viewed as a best approach for

controlling their young generation's behaviors and promote their academic achievement. Clinical observations show that physical punishment has tended to decrease in African American communities (Ho, Rasheed, & Rasheed, 2004). The latest 10-year parenting-related research in Taiwan indicated that young generations, importing many western ideas of what is positive parenting, are more likely to develop maladjustment if their parents tend to use physical punishment (Chen, 2000; Lee & Wu, 2004; Wu & Chen, 2001).

Although parenting research abounds and the most effective parenting style may vary by ethnic groups, time, and social context, parental monitoring seems to be a key parenting practice in some ethnic groups such as African American. Moreover, given that the previous literature suggested that parental monitoring is important for children who are reared in disadvantaged environments, the following section focuses on the association between parental monitoring and children's developmental outcomes.

Parental Monitoring

In general, parental monitoring implies that parents know what their children do and with whom and where they spend time. Research on children in high and low risk environments has concluded that parental monitoring is related to children's absence of mental illness and to their positive school achievement (Belgrave & Allison, 2006; Chao, 1994; Simons et al., 2002; Tiet et al., 2001). For example, a secondary data analysis with a sample of 1258 children aged 9 to 17 suggested that parents' closer monitoring prevented children in a family with multiple stressors (including a parent with mental

illness and multiple life events) from developing a psychiatric illness and fostered age-appropriate competences (Tiet et al., 2001).

Parental monitoring has shown its significant influence on youths living in a community with high prevalence of violence. Simons and colleague (2002) compared two groups of youths, and concluded that the positive effect of parental control was significantly stronger for youths who live in a community with high prevalence of deviance than those in a community of low prevalence of deviance (Simons et al., 2002). Research also suggested that parental monitoring was important predictor for African American adolescents' academic achievement who lived in a community with a high rate of violence (Gonzales, 1996).

Furthermore, the positive effect of parental monitoring on children's adjustment was also identified in children from single-parent families with a parent with depression, particularly for improving children's behavioral-related developmental outcomes (Garber, 2005; Hartos & Power, 2000; Jones, 2005; Thomas, Reifman, Bannes, & Farrell, 2000). However, findings regarding the positive effect of parental monitoring on at-risk children's internalizing outcomes (depression and anxiety) are mixed (Garber, 2005). A review by Garber (2005) suggested that parental monitoring may not be an effective predictor for the internalizing behaviors in children of a parent with depression.

In short, the positive effects of parental monitoring have been found in different types of at-risk groups. Parental monitoring is often associated with at-risk children's behavioral and school-related outcomes. This means that parental monitoring could function as a robust protective factor for children in disadvantaged environments.

Extended Family/Kinship Family

The quality of extended family close social networks could greatly affect at-risk children's developmental outcomes. For ethnic groups such as African American families and Asian families, extended family members are often involved in the child-raising process (Belgrave & Allison, 2006; Kinnear, 1996; Yi, Pan, Chang, & Chan, 2006). Statistics show that one out of three grandparents in African American families helps raise grandchildren while only one out of ten grandparents in white families do so (Mosley-Howard & Evans, 2000). Literature shows that various types of support that extended/kinship family provide to the African American families may buffer the stress these families face (Belgrave & Allison, 2006; Kinnear, 1996; Waites, 2009). In general, extended/kinship family members provide emotional support, information counseling, financial support, and material supplies to the families in need. An African American single parent receiving positive support from relatives could benefit her children, perhaps feeling less distressed and better able to parent (Jones, 2005; Thomas, Reifman, Bannes, & Farell, 2000).

Nevertheless, some researchers and authors have argued that the effect of extended/kinship family support does not necessarily work for at-risk children's positive development. One possible reason is that the lack of the particular capacity of the support providers, such as teaching a parent how to discipline children efficiently, may not help to improve the parent's capabilities related to her/his child's development (Lyons et al., 2005). Moreover, the "support" which an extended family/kinship family provides may inversely increase the stress within a family if there is a conflicting interaction between a

support provider and the parent (Belgrave & Allison, 2006; Jones, 2005; Yi, Pan, Chang, & Chan, 2006). A support provider and the parent may have different opinions regarding how to discipline the child or the grandparents have used up their physical and material resources in taking care of young kin.

In short, literature has consistently indicated that parenting appears to have a different impact on children's outcomes depending on the meaning of parenting concepts for target population. Among various types of parenting, parental monitoring has been demonstrated as effective protection to prevent at-risk children's problematic behaviors and to promote school performance, an indication of a potential robust protective factor. Moreover, literatures in studying helping professionals have suggested the importance of assisting families through promoting members' communication and enhancing relationships. Hence, this study proposed to test the hypothesis that positive communication and parent-child relationship could be a robust protective factor the target youths. Finally, in some ethnic groups, extended family/kinship family can be an important factor that mitigates a parent's stress perception and then further promotes her/his children's positive adjustment. However, no consistent evidence indicates that extended family/kinship family could be a robust protective factor for disadvantaged children.

Protective Factors at the Community Level

Protective factors at the community level refer to the intangible and tangible resources that promote the positive adjustment in children of a parent with depression. Although most families have some individual and family-related assets to respond to the

illness, a risk chain associated with parental illness may quickly exhaust families' existing resources (e.g. time, energy, and materials) (Gabber, 2005; Hammen 2003). Especially for these families who have lived in poverty and faced multiple problems, there may be few resources within the family system to meet the needs of their children. Moreover, a family of a member with depression often needs a wide range of mental health, social, rehabilitative, and even vocational and residential services (Marsh, 1998). Therefore, resources from people or agencies outside the family are important (McCubbin, Thompson, & McCubbin, 1996; Werner, 2005). Community protective factors including nonparent adult support, school support, and peer support for at-risk children and youth are discussed below.

Nonparent Adult Support

A number of empirical studies demonstrate that a caring nonparent adult (e.g. a neighbor, teacher, social worker) serving as a mentor or substitute parent for children reared in disadvantaged environments can mitigate these children's distress (Saleebey, 2006; Werner, 1993, 2005). These adults may create a nurture-support relationship with the child through consistently showing their care, comforting the child's distressful emotions, offering the child learning opportunities, expressing their high expectations for the child's future, and even helping the child with financial problems.

Werner's (2005) longitudinal study, for example, suggested that a caring adult who consistently supports children reared in a multiple-problem family was a key protective factor which prevented these children from developing psychiatric illness and criminal behaviors. Another study focusing on the children of a father with depressive and

substance abuse problems concluded that girls who received support from another nonparent adult demonstrated lower levels of depressive symptoms; however, the influence of this nonparent support varied by ethnicity (Mexican American and European American) and the risk level of fathers' circumstances (Casey-Cannon, Pasch, & Tschann, 2006).

Although the positive effect of a nonparent adult support has been recognized, no substantive evidence demonstrates that nonparent adults could provide a broad range of protection across different developmental domains for youth reared in disadvantaged environments. For example, in contrast to the findings of Casey-Cannon and colleagues, Zimmerman et al. (2002) found that nonparent support could not reduce the depression of African American urban youth but it reduced their use of illicit drugs. In addition, some research showed that in some high risk contexts, the frequent contact with adult friends may contribute to the youths' negative development rather than desirable positive outcomes, if the adult is a negative influence (Conrad & Hammen, 1993).

As research on social support has suggested, social support in different formats (e.g. provision of information, material supply, and emotional support) does not always link to individuals' positive adjustment (Hupcey, 1998; Rock, 1984). Negative interaction relationships such as a child affiliating with delinquent people or allying with another family member who has a conflicting relationship with that child's primary caregiver could increase this child's psychological distress possibly increasing the incidence of psychopathology (Craig & Dunn, 2007).

School Support

For school-aged children including adolescents, schools provide them with the opportunity to learn knowledge and skills, and to build up social networks. Some empirical studies across different cultures show that resilient children who achieve age-appropriate development are more likely to receive positive peer support and positive feedback from their teachers when compared with maladjusted children who are in similar disadvantaged situations (e.g. Garber & Little, 1999; Kaminsky, Robertson, & Dewey, 2006; Radke-Yarrow & Brown, 1993; Werner, 1993, 2005). However, relatively few research findings derive from longitudinal studies that control for extraneous variables in order to confirm the cause-effect order of children's adjustment and children's perceptions of social support. One exception is made by Reddy and colleagues (2003). Based on a longitudinal data with a sample of 2,585 middle school students, they concluded that teacher support was the important predictor for these children's depression and self-esteem, rather than the reverse (Reddy, Rhodes, & Mulhall, 2003).

Peer Support

In addition to the family's influence, researchers and authors have noted that youths tend to ask their friends' opinions about fashion, dating, school activities, and seek peers support when they encounter troubles (Ezzell, Swenson, & Brondino, 2000; Hutchison et al., 2007). The positive effect of peer support also has been well documented in research focusing on children whose parents were divorced, and children with a chronic illness or physical/mental challenges (Ezzell et al., 2000; Schleien, Green, & Stone, 2003; Snow, 2002).

The effect of peer influence upon youths could be different for boys and girls. Research consistently documented that girls tend to actively seek support when they encounter personal problems and perceive themselves having more peer support more than boys do (e. g. Colarossi & Eccles, 2003). However, the frequency of contacting peers does not guarantee girls' positive development (Bogard, 2005). Researchers have suggested that girls are more sensitive to interpersonal conflicts than boys who face similar situations (Gore & Aseltine, 1995). Dissatisfaction with social support could be a risk factor related to internalizing behaviors for girls but not for boys (Stacks & Goff, 2006).

In addition to gender, peers' characteristics play a key role in a young person's development. Studies show that youth who frequently interact with peers who are more prosocial are less likely to develop maladjustment in spite of facing severe life challenges (Brody et al., 2006; Gonzales, 1996; Gore & Aseltine, 1995). For instance, a study by Grođlu and colleagues compared three different types of friendship (prosocial, antisocial, withdraw friendship) by using a sample with 737 friendship dyads of preadolescents (mean age 11) and 1,102 friendship dyads of adolescent (mean age 14). They concluded that individuals with prosocial relationships tend to have a low level of internalizing and externalizing behaviors (Grođlu, van Lieshout, Haselager, & Scholte, 2007).

Like Grođlu et al. (2007) mentioned, "as prosocial behavior is most closely linked to mutual liking, cooperation, and reciprocity, friendships involving such a profile are likely to be characterized by highest level of similarity" (p. 360). Hence, individuals who have prosocial friends may be more likely to act like their prosocial friends. In contrast, if

individuals frequently hang out with peers with delinquent behaviors (e.g. violent behaviors, drug and/or alcohol, smoking), these individuals, particularly boys, are more likely to develop behavioral problems (Bahr et al., 2005; Bogard, 2005; G uro lu et al., 2007; Pictotte et al., 2006; Simons-Morton et al., 2004). Hence, some intervention programs for anti-social youths have purposely recruited some members with prosocial characteristics for programs in order to change target youths' delinquent behaviors (Hertzog & Farber, 2003; Vance, Bowen, Fernandez, & Thompson, 2002).

Although peers profoundly affect youths' development, the evidence for the positive influence of peer support on youths' developmental outcomes related to family stress is mixed. Using a low-risk sample (N=1,036) from three high schools in the Boston area, Gore and Aseltine (1995) argued that peer support had no main effect on family-related events, although in a test of interactive effect, they suggested that enacted peer support would mitigate the youths' personal problems which may lead to depression (Gore & Aseltine, 1995). A limitation of peers' age-related personal resources and capabilities may make them unable to provide a sufficient buffering effect toward the family stress that their friends face. Hence, this study concluded that peer support can not buffer family stress, an indication of no cross domain buffering effect in peer support³. In contrast, some studies show that peer support has cross-domain buffering effects. In other words, peers' support mitigates target children's distress related to parental depression (Garber & Little, 1999; Werner, 1995). For instance, following up a group of at-risk children whose mothers reported a history of depression, Garber and Little (1999) concluded that

³ Cross domain buffering effect means that one type of support buffers the effect of another type of stress.

high peer support, children's school commitment, and family support were key factors in assisting children to maintain good academic performance. More studies are needed to further examine the association of peer support and different types of stressors that at-risk youth face.

As discussed above, not every type of peer-related influence serves as a protective factor for disadvantaged youths. Although girls may report receiving more peer support than boys, peer support can not guarantee girls a better developmental outcome. In general, peers' characteristics profoundly affect youths' behaviors. Youths who report having prosocial friends are more likely to act as their friends do. However, no strong and consistent evidence supports that prosocial friends can mitigate family-related stressors. Hence, prosocial friend's support is less likely to act as a robust protective factor in this study focusing on family-related stressors.

Summary of Protective Effects

The literature has suggested that several sources could function as protective factors for youths in disadvantaged environments: 1) individual factors include temperament, optimism, self-regulation, coping strategies, and cultural valued activities; 2) family factors include positive parent-child communication, supportive parent-child relationship, parental monitoring, and extended family support; and 3) community factors include nonparent adult support, positive teacher-student relationships, and peer support. Some of these above factors were used as predictors in this research model if FACHS had scales or items corresponding to these concepts.

In addition, several potential robust protective factors for youth reared in disadvantaged environments were also identified, including youths' self-regulation capability, positive parent-child communication, supportive parent-child relationship, and parental monitoring. Except for positive parent-child communication,⁴ the other three predictors were actually tested in the research model to see whether they function as a robust protective factor. Based on the above literature suggestions, for three research aims, this study addressed corresponding questions and hypotheses as below.

This research also proposed to test two potential control variables: youth gender and the presence of secondary caregiver at home. Studies conducted in different cultural contexts have suggested that males and females differ in how they manifest symptoms. Boys are more likely to report conduct disorder symptoms while girls are more likely to report depressive symptoms (e.g. Chen, 2000; Kessler, 2003). Girls are more likely to report having more peer supports and/ or to be affected by peer relationships than boys (e.g. Colarossi & Eccles, 2003; Gore & Aseltine, 1995). Furthermore, the literature suggested that the number of caregivers at home, the relationship quality of primary and secondary caregiver, and the secondary caregivers' parenting practice may impact the effects of parental depression on the children (Belgrave & Allison, 2006; Jones, 2005). Considering the parsimonious model, this study did not include secondary caregivers' parenting practice in the research models, but tested only the presence of secondary caregiver at home.

⁴ Because preliminary data analysis showed that parent-child communication did not significantly correlate with any one of the youth outcomes, the parent-child communication was removed from the research model.

Research Aims, Questions, Hypotheses

Aim 1: To explore the association between ecological protective factors and four outcomes- Emotional Adjustment, Behavioral Adjustment, School Performance, and Educational Aspiration Model - in youths who have multiple risk factors (having a parent with depression, are facing financial stress, and living in a disorganized community).

Question 1: What are the protective factors for the Emotional Adjustment Model of the target youths?

Question 2: What particular protective factors best account for the variance in the Emotional Adjustment Model?

Question 3: What are the protective factors for the Behavioral Adjustment Model of the target youths?

Question 4: What particular protective factors best account for the variance in the Behavioral Adjustment Model?

Question 5: What are the protective factors for the School Performance Model of the target youths?

Question 6: What particular protective factors best account for the variance in the School Performance Model?

Question 7: What are the protective factors for the Educational Aspiration Model of the target youths?

Question 8: What particular protective factors best account for the variance in the Educational Aspiration Model?

Aim 2: To identify the robust protective factors for these target youths.

Question 1: Do the robust protective factors exist in this research sample?

In other words, do specific protective factors have a broad range of protection across at least two domains of developmental outcomes in this research sample?

Hypothesis 1: Positive self-regulation capability is more likely to serve as a robust protective factor for these target youths.

Hypothesis 2: Positive parent-child relationship is more likely to serve as a robust protective factor for these target youths.

Hypothesis 3: Parental monitoring is more likely to serve as a robust protective factor for these target youths.

Aim 3: To explore the interactive relationships between risk and robust protective factors.

Question 1: Under the conditions of high levels of risk effect, how do robust protective factors react to the conditions?

Question 2: Under the conditions of high levels of risk, how do other protective factors react to the conditions?

Question 3: Would new robust protective factors develop when the risk effect increases?

CHAPTER 3: METHODOLOGY

The Nature of Secondary Research

This research consisted of secondary data analysis of an existing data set from the Family and Community Health Study (FACHS). Given that this dissertation research focused on the resilience perspective, a phenomenon that is understood best over time, a large longitudinal data set with a broad scope of risk and protective factors is preferred. FACHS can satisfy this study's needs. With the use of secondary data with no access to identifiable personal data, this study qualified for *Exempt Initial Review* by the Institutional Review Board (IRB). Given that secondary data analysis was the main research method in this study, the advantages and disadvantages of this method will be addressed.

Secondary data have been defined as “information collected by other researchers but available, sometimes in databases, for use by others” (Vogt, 2005, p.290). Unlike primary data, secondary data are collected by someone other than the current researcher (Stewart & Kamins, 1993). While general researchers must address political and ethical issues involving other human subjects in the data collection process, secondary data researchers may face political and ethical challenges related to obtaining permission to use the data. In addition, researchers using secondary data may need to make an effort to understand the complex data collection and coding systems of the secondary data and to access data from different organizations/agencies while others using primary sources of data often struggle to access target populations. Similar to primary data, the purpose of secondary

data is to address a need by answering specific question(s) (Price, 2008; Stewart & Kamin, 1993).

Secondary data analysis is widely used in some disciplines such as public health and sociology, and in certain research fields, such as policy analysis because the nature of research questions in these areas often requires a retrospective perspective and/or multiple time points of observations (Price, 2008; Redmond, 2004; Stewart & Kamins, 1993). However, the cost of multiple time points of observations and data collection may not be affordable for many researchers. The strengths of secondary data include, but are not limited to: 1) saving resources such as time, money, and research utility; 2) providing an opportunity to explore the data from different perspectives; and/or 3) providing a relatively solid base for research comparisons (Redmond, 2004; Rubin & Babbie, 2005; Stewart & Kamins, 1993).

On the other hand, some potential issues need to be taken into account when considering using secondary data (Redmond, 2004; Rubin, & Babbie, 2005; Stewart & Kamins, 1993). First, researchers should examine in advance whether the secondary data include sufficient data to meet researchers' needs. Second, any methodological design issue of the original research will inevitably affect the quality of data used in this current study. Third, researchers should consider the timeliness of the secondary data. In other words, researchers need to consider whether the secondary data is too old to provide valid information for the current social contexts. Next, the strengths and limitations of using secondary data from FACHS, and the connection between FACHS data and this study are addressed as follows.

Description of Family and Community Health Study (FACHS)

FACHS is a panel study⁵. A highly cohesive interdisciplinary team representing several disciplines (mostly family study, psychology, and sociology), the FACHS research team has continuously followed the same group of children from early adolescence to adulthood over a 12 year period of time. Together, FACHS researchers strive to clarify “which life events, social transitions, and community contexts factors combine to either accentuate or redirect behavioral tendencies” (Simons, 2002, p.1). A panel study design gives this study the advantage of being able to control the time order issues of key variables and further to explore the cause-effect relationship. FACHS started to collect data in 1997 from multiple sites (Georgia and Iowa) and multiple respondents (children, primary caregivers, and secondary caregivers). Using multiple respondents provides relatively comprehensive and objective information to a given study phenomenon (Simons, Simons, Chen, Brody, & Lin, 2007).

By 2008, FACHS has completed four waves of data collection. In the first wave, FACHS recruited 898 African American children and their family members. Within this sample, 400 are boys and 467 are girls; with 462 from Iowa and 405 from Georgia (Simons et al., 2007). The children were between 10-12 years old when researchers first contacted them. About 10 % of respondents of the first wave dropped out in the second wave. This dissertation research used all children sampled in the first and second waves to examine how ecological risk and protective factors affect these youths’ adjustment.

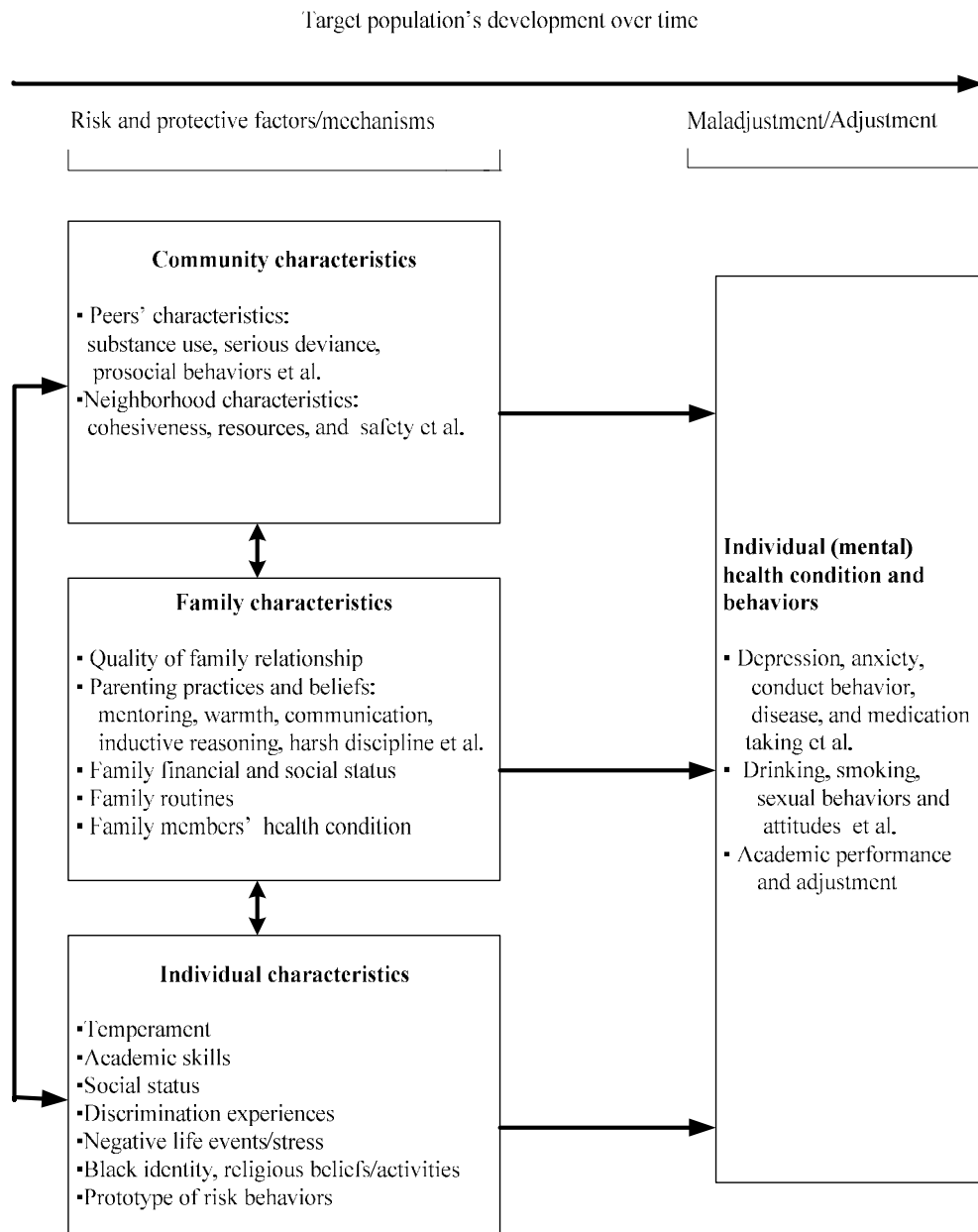
⁵ Panel study refers to “a longitudinal study of the same group of subjects” (Vogt, 2005, p. 226).

FACHS is guided by “a life-course perspective that views children’s developmental trajectories as a sequence of causal factors in which dependent variables become independent variables over time” (Simons, 2002, p.1). The life-course perspective is compatible with the resilience perspective in that both are grounded in the developmental contexts focusing on the association between the quality of the environment and an individual’s development over time. Using the life-course framework together with a panel study design, FACHS studied various ecological risk, protective, and adjustment variables across the lives of African American youths. Hence, FACHS provides sufficient variables to satisfy a variety of research interests among FACHS researchers (e.g. community violence, woman health, youths’ conduct problems) as well as to this study’s interests.

Figure 1 and Figure 2 provide information about the connection of data used in this dissertation and the original FACHS data set. One thing that needs to be noted is the lack of a static FACHS conceptual framework. In fact, FACHS is the compilation of several researchers’ efforts over time. These researchers addressed different research proposals with various conceptual frameworks to satisfy their research interests and funding agencies’ requirements. Hence, Figure 1 is created based on this researcher’s understanding of the existing FACHS data and is for the purpose of this dissertation only.

Figure 1

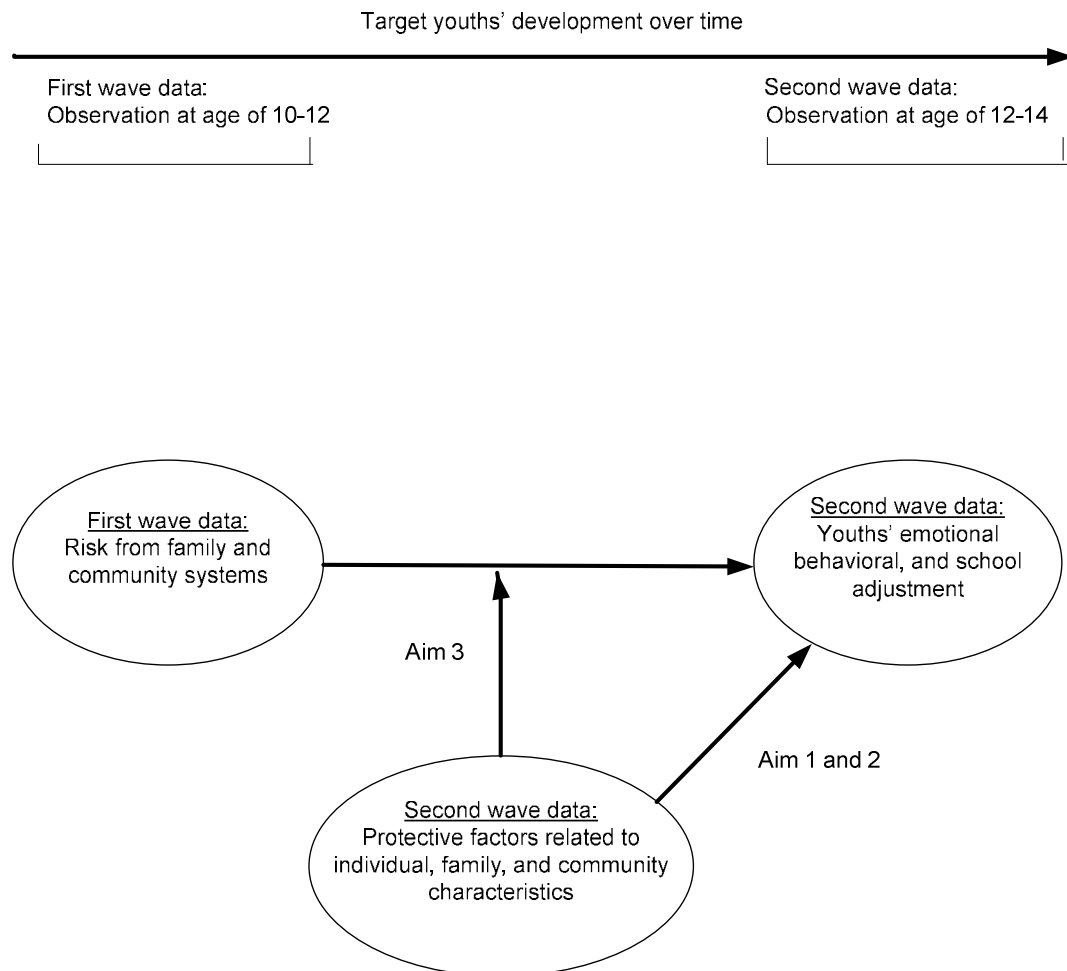
FACHS Conceptual Framework



Notation: Individuals' adjustment outcomes at early developmental stages could become risk/protective factors for their later development stages.

Figure 2

Conceptual Framework of this Dissertation Study



Sampling Strategies

Participants of FACHS were first recruited in 1997 through several steps. First, using data from 1990 U.S. Census, FACHS researchers identified 259 Block Group Areas⁶ (BGAs) in which African American families make up at least 10% of the population and at least 10% of African American families with children are living in poverty as defined by the Census Bureau standard. There are a total 144 BGAs in Iowa and 115 BGAs in Georgia. In Iowa, BGAs in Waterloo (population 65, 000) and Des Moines (population 193, 000) which met the identified criteria were included. In Georgia, BGAs meeting the criteria were small towns and suburban areas adjacent to Atlanta.

Second, a random sampling strategy was used to sample African American families with children from qualified BGAs. In Iowa, the sampling framework was made based on the information provided from public schools of selected BGAs. In Georgia, the sampling framework was made based on the information provided from community liaisons who were community members of selected BGAs who agreed to serve as negotiators between Georgia researchers and other community residents. Over 60% of the families who were contacted in each state agreed to participate. Families who declined participation were removed from the sampling list and other families were randomly selected until the required number of families from each BGA had been recruited (Ge et al., 2002).

⁶ During the 1990 census, BGAs averaged 452 housing units with 1,100 residents (Ge, Brody, Conger, Simons, & Murry, 2002).

Procedure

To enhance cultural sensitivity of the questionnaires, before data collection began, each state held four focus groups. In each focus group, 10 African American women who lived in neighborhoods similar to the study participants reviewed the draft of questionnaires and gave suggestions for modifying items of the questionnaires. In addition, a pilot study was conducted after the focus groups' suggestions were incorporated into questionnaires. Each state recruited eight families for its pilot study. Suggestions from the pilot study were incorporated into the final version of questionnaires. One month of interviewer-training was held before data collection. To enhance cultural understanding, African American university students and community members were invited to serve as interviewers. Data collection occurred in families' homes, with each family receiving two home visits, each lasting approximately two hours. The second visit occurred within seven days of the first interview. Visiting time was pre-planned and some basic information of family circumstances (i.e. if the children have secondary caregivers and siblings) was collected by phone before the initial visit. Informed consent was obtained in the first visit. Primary caregivers consented to their own and on their children's behalf. The target child and primary caregiver were interviewed separately. A third home visit was conducted if the children had secondary caregivers (n=474).

Laptop computers were used to help conduct the interviews. Each question was presented on the laptop computer screen. Most of time, the interviewers read each question and entered the answer with the computer keypad. However, for sensitive

questions, such as questions related to the parent's diagnosis, respondents were asked to enter their own answer. In addition, in the diagnostic interview, if a respondent does not meet a key criterion for a specific disorder (e.g. the mood/loss of interest criterion for major depression), the rest of the questions about symptoms of that disorder were skipped. Individual error related to which questions to administer or answer was eliminated because it was pre-designed in the computer program (Cutrona, Russell, Brown, Clark, Hessling, & Gardner, 2005).

Measurements

In addition to three risk factors—parental depression, family financial stress, and disorganized community, a review of the literature identified several protective factors for youth reared in disadvantaged environments. To maintain a parsimonious model, and consider the issue of statistic power, this study included six predictors based on preliminary data analysis [detailed information was provided in Chapter 4]. These selected predictors were self-regulation, optimism, positive parent-children relationship, monitoring parenting, teacher support, and peer support.

Most of the scales in FACHS have demonstrated good reliability and validity. However, because this study only used a specific subsample of the original FACHS research sample, to ensure the selected scale was relevant to the selected subsample, factor analysis was used to examine each scale before conducting subsequent statistical analysis [detailed information was provided in Chapter 4]. Table 1 provided a summary description of the original measures used for this research.

Table 1

Measures for All Study Variables

Variable	Definition	N of items	Level of measurement
Adjustment outcomes			
Emotional adjustment	Depressive symptoms based on DSM-IV	22	Nominal (0,2)
Behavioral adjustment	Conduct disorder symptoms based on DSM-IV	27	Nominal (0,2)
School performance	Perception of general school performance	6	Interval (1-4)
Educational aspiration	Expectation of the highest education degree	2	Interval (1-3)
Risk factors			
Depression of primary caregiver	A life time diagnosis of Major Depression and Dysthymic Disorder based on DSM-IV	Varies by case	Nominal (0,1)
Family financial stress	The experience of inability to make ends meet	2	Interval (1-5)
Disorganized community	The perception of environment as untidy and presence of illegal activities in neighborhood	7	Interval (1-3)
Protective factors			
Self-regulation	The ability in deliberating or self-control via modulated thoughts, emotions, and behaviors	7	Interval (1-3)
Optimism	The generalized expectation of a positive outcome of the future	12	Interval (1-4)
Positive parent-child relationship	The perception of the quality of parent-child relationships	2	Interval (1-4)
Parental monitoring	Knowledge of children's whereabouts and activities	4	Interval (1-4)
Prosocial friend	Peers' reactions to respondent's school-engaging and health-enhancing behaviors	9	Interval (1-3)
Teacher support	The perceptions of the positive relationship with a teacher	1	Interval (1-4)

Dependent Variables: Emotional Adjustment, Behavioral Adjustment

School Performance and Educational Aspiration

As mentioned earlier in Chapter 1, the construct of positive adjustment in the resilience literature has been assessed through measuring individuals' age-appropriate achievement, and the levels of symptoms related to stress (Kirby & Fraser, 1997; Masten, 2001). Since the major social role of these youths in this study was student, school-related outcomes (school performance and educational aspiration) were used to represent youths' age-appropriate achievement (Erikson, 1993). Furthermore, internalizing (e.g. depression) and externalizing problems (e.g. conduct problems) have been used to assess children's developmental outcomes related to parental depression. Hence, low levels of depressive symptoms and conduct disorder symptoms were considered indication of relatively positive adjustment (Garber & Little, 1999).

Hence, positive adjustment in this study was operationalized as youths achieving higher levels of school related outcomes and experiencing lower levels of depressive and conductive disorder symptoms. Four scales-school performance, educational aspiration, depressive symptoms, and conduct disorder symptoms-were used to measure these youths' positive adjustment. To reflect the spirit of resilience and strengths perspective which emphasize "positive outcomes," when conducting regression analyses, the term *emotional adjustment* was used instead of using lower levels of depressive symptoms, and the term *behavioral adjustment* was used instead of using lower levels of conduct disorder symptoms.

Youths' Depressive and Conduct Disorder Symptoms (Appendix A & B)

The Diagnostic Interview Schedule for Children, Version IV (DISC-IV; Shaffer et al., 1993) was used to assess the youths' emotional and behavioral adjustment. More specifically, the depression subscale of DISC-IV measured emotional adjustment and the conduct disorder symptoms subscale was used for measuring behavioral adjustment. Although both parent and child reports are available in FACHS, this study used the child report because older children and adolescents are considered to be the most valid source regarding their thoughts, feelings, and behaviors (Simon, Simons, Chen, Brody, & Lin, 2007).

DISC-IV is a highly structured diagnostic interview. It has been recognized as a comprehensive instrument to determine more than 30 psychiatric diagnoses that occur in childhood and adolescence (Shaffer et al., 1993). DISC was developed in 1979 by a research team in the NIMH division of Biometry and Epidemiology for epidemiological surveys of children. DISC-IV revised DISC-2.3 based on the research findings of the Epidemiology of Child and Adolescent Mental Disorders (MECA) study and incorporated both criteria of DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th ed.) and ICD 10 (International Statistical Classification of Diseases and Related Health Problems, 10th revision) (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000).

Different versions of DISC have been used in community settings, clinical settings and prevention programs (Fisher, Lucas, Shaffer et al., 1997 as cited in Shaffe et al., 2000). In the child report version, the section on depressive symptoms has high test-retest

reliability ($r=.92$) while the section on conduct disorder symptoms has moderate test-retest reliability ($r=.65$). Although validity testing of DISC-IV is not available at this point in time, earlier DISC versions (such as 2.3 and 2.1 versions) have reported having a moderate to excellent agreement between DISC rating and the clinicians' rating (Shaffer et al., 2000). In FACHS, internal reliability tests are good. Cronbach alpha of depressive symptoms at wave 1 is .86, and at wave 2 is .84. Cronbach alpha of conduct disorder symptoms at wave 1 is .68 and at wave 2 is .69 (Brody et al., 2006; Center for Family Research at University of Georgia/CFRUG, 2006).

One of the strengths in using the DISC-IV is that its questions are short and simple (Shaffer et al., 2000). For instance, in the section on depression, questions typically contain 1-2 concepts (e.g. a time period and a symptom description). The DISC-IV generates both symptoms and diagnoses counts (Brody et al., 2006). Symptom count will be used in this study because fewer than 5% of the youth in the sample met the diagnosis criteria.

A total of 22 items ask about the youths' depression related symptoms such as feelings of sadness, irritability, tiredness, sleeping problems, difficulty focusing or making decisions, and thinking about death or suicide. Youth were asked if they had symptoms in each item (e.g. if they *felt sad*) during the past year. Youth rated 2 (*yes*) or 0 (*no*). Conduct disorder symptoms subscale contains 27 symptoms count questions. Similar to the depression subscale, youth were asked to rate 2 (*yes*) or 0 (*no*) for each item about their delinquent behaviors in the past year (e. g. lying, setting fires, shoplifting, cruelty to animals, and robbery).

School Adjustment-School Performance & Educational Aspiration (Appendix C & D)

FACHS researchers have composed a school engagement variable from several items asking youths' perceptions about school life, academic commitment, school performance, and educational aspiration. Factor analysis, generated two factors from the school engagement-related items pool. One factor assessed youths' current school related outcomes and the other factor focused on youths' educational aspiration. Hence, one factor was called *school performance* (6 items) and the other was called *educational aspiration* (2 items).

In the school performance scale, youths were asked to rate the degree to which they agreed with each item's statement on a 4-point scale. Examples of items on this scale include: "Other students think you are a good student"; "You try hard at school"; "You do well in school, even in hard subjects". Youths rated 1 (*strongly agree*), 2 (*agree*), 3 (*disagree*), or 4 (*strongly disagree*). In educational aspiration, youth were asked to rate on a 3-point scale the highest educational degree that they would like to achieve. One sample question is: "If you could go as far as you wanted in school, how much education would you like to have?" Youths rate 1 (*less than high school*), 2 (*graduated from high school*), or 3 (*more than high school*). Internal consistency (Cronbach's alpha) for this study's population in school performance was .63, and .53 for educational aspiration.

Predictors: Risk Factors

As mentioned earlier in Chapter 1, risk factors in this study refer to the circumstances of family and community with which youth interact that are more apt to increase their likelihood of becoming maladjusted. Risk factors in this study were operationalized as having a parent with depressive symptoms, living in poverty and living in a disorganized neighborhood. For the concept of parental depression and family financial stress, more than one scale was available in FACHS as discussed below.

Depression of Primary Caregivers (Appendix E)

University of Michigan Composite International Diagnostic Instrument (UM-CIDI)⁷ was used to identify primary caregivers who had a life time diagnosis of depression. Primary caregivers received a structured psychiatric diagnostic interview and answered questions in a two-point format (*yes or no*). Like the Diagnostic Interview Schedule (DIS), CIDI has been well used around the world and reported to have acceptable reliability. The UM-CIDI has been reported to improve the reliability of the early version of CIDI (Wittchen & Kessler, 1994). Both diagnoses, Major Depression and Dysthymic Disorder, were used for this study in order to extend the variety of families with a parent with depression.

⁷ Questions for identifying primary caregiver's depression diagnosis were composed of both Diagnostic Interview Schedule (DIS) and initial screening items from UM-CIDI. By using these screening items, respondents can skip some sections of the question if the person cannot possibly meet diagnostic criteria. Both DIS and UM-CIDI serve similar functions in generating a DSM-IV diagnosis. A FACHS researcher seemed to view the combined questions of DIS plus screening items from UM-CIDI function as UM-CIDI; therefore, for simplicity, the FACHS researcher refers to these questions as UM-CIDI (Cutrona et al., 2005; Linda, personal communication, February, 2009). This study followed this suggestion.

Family Financial Stress

FACHS includes both subjective and objective measures of family financial situations: *per-capita income* and *inability to make ends meet*. Conceptually, either scale is appropriate for this study. The measure of *per-capita income* gives objective information about family financial situation while the measure *inability to make ends meet* gives more subjective information about the primary caregiver's perception of family financial stressors. However, both scales have their weakness (i.e. high percentage of missing values in per-capita income, and only two good items related to inability to make ends meet). Since both measures present the concept equally well, yet have limitations, this study sought empirical support to help make the decision. Based on the preliminary data analysis result (please refer to Chapter 4), the scale *inability to make ends meet* was used for this study.

Inability to Make Ends Meet (Appendix F)

Inability to make ends meet includes two items that were developed for the Iowa Youth and Families Project (CFRUG, 2006). Respondents were asked to rate the degree to which they perceived the difficulty to pay bills and make the ends meet in the past 12 months. One example is "During the past 12 months, how much difficulty have you had paying your bills?" Primary caregivers rated 1 (*a great deal of difficulty*), 2 (*quite a bit of difficulty*), 3 (*some difficulty*), 4 (*a little difficulty*), or 5 (*not difficulty at all*). Cronbach alpha was .73.

Disorganized Community (Appendix G)

Seven items with a 3-point format created for FACHS were used to measure community disorganization (CFRUG, 2006). Caregivers were asked to rate the degree to which their neighborhoods were untidy, and had illegal activities such as drug selling, gang violence, and drinking problems. Examples include “How about litter, broken glass or trash on the sidewalks or streets? Is it...; People selling or using drugs. Is it...”. Caregivers rated 1 (*a big problem*), 2 (*somewhat of a problem*), or 3 (*not at all a problem*). The Cronbach alpha was .90.

Predictors: Individual-Related Protective Factors

Self-regulation (Appendix H)

Humphrey’s Children’s Self-Control Scale was used for measuring youths’ self-regulation. The scale’s validity has been supported (Brody, Murry et al., 2002). Youth were asked to rate the degree to which they agreed each item related to emotional, behavioral, or cognitive regulation capability. Examples include: *You can deliberately calm down when you are excited or wound up; You usually think before you act*. Youth rated 1(*not at all true*), 2 (*somewhat true*), or 3 (*very true*). Based on factor analysis results, five items remained and were used for this target population. The Cronbach’s alpha for these remaining items was .60.

Optimism (Appendix I)

The optimism scale developed by Scheier and Caver (1985) was used for measuring youths’ general perceptions of future positive outcomes. This scale includes 12 items. Youth were asked to rate from 1 (*strongly agree*) to 4 (*strongly disagree*) to express the

degree to which they agree with the statement regarding expecting good things will happen. “ *If something can go wrong for you, it will. Do you...* ”; “ *You always look on the bright side of things. Do you* ”; “ *You are always optimistic about your future. Do you.....* ”. Based on factor analysis results, four items remained and were used for this target population. The Cronbach’s alpha for these remaining items was .67.

Predictors: Family-Related Protective Factors

Most of these measurements and items related to parenting behaviors were initially constructed and used for the Iowa Youth and Families Project (Brody, Ge et al., 2001). Past studies have shown that these measures use separately or combined together have moderate to high internal consistency (Brody, Xiaojia et al., 2001; Brody, Murry, Kim, & Brown, 2002). Both parent and child reports are available in FACHS. Methodologically, using both parent and child reports can function as a triangulation to generate relatively objective information about parent-child interaction and relationship quality. Previous researchers tend to use either a combination score of both reports or include both reports separately in the research models (Broday, Ge et al., 2001; Simmons et al., 2007).

However, a combination score of both reports in this study was not appropriate because their correlation was low (Pearson’s $r=.16$ for positive parent-child relationship, $r=.18$ for parental monitoring). Moreover, given the needs for the most parsimonious model and the limited statistical power, it is not feasible to include both parent and child report separately in research model. Hence, this study only used the child report.

The Positive Parent-Child Relationship (Appendix J)

The quality of parent-children relationship scale was used to measure the children's perception of their parent-child relationship. It is a 4-point scale with two precise items about parent-child relationship including: "How satisfied are you with your relationship with your primary caregiver; How happy are you with the way things are between you and your primary caregiver?" Youth rated 1 (*very satisfied*), 2 (*fairly satisfied*), 3 (*fairly dissatisfied*), or 4 (*very dissatisfied*). Factor analysis results suggested that two items belonged to the same construct. The Cronbach alpha was .82.

Parental Monitoring (Appendix K)

Youth were asked to rate four items using a 4-point scale to show the degree to which their caregivers know what their children do, where their children are, and how their children are doing in school. Examples of this scale include: *How often does your primary caregiver know if you do something wrong?*; *How often does your primary caregiver know what you do after school?* Youth rated 1 (*always*), 2 (*often*), 3 (*sometimes*), or 4 (*never*). Factor analysis results suggested that four items belonged to the same construct. The Cronbach alpha was .81.

Predictors: Community-Related Protective Factors

Prosocial Friends (Appendix L)

The scale of youths' prosocial friends was created for FACHS. This is a nine item 3-point scale. Youths were asked to rate the degree to which their friends support them to engage in prosocial activities (community activities, academic planfulness, and help at home). Examples of this scale include: *If you worked hard to get good grades in school,*

would your close friends...; If you helped at home by doing things like cleaning, doing dishes, or taking care of your brother or sister, would your close friends.... Youth rated 1 (tell you to stop), 2 (do nothing), or 3 (encourage you to do it again). Factor analysis results suggested that five items belong to the same construct. The Cronbach alpha was .76.

Teacher Support (Appendix M)

One item was used for this study to assess the degree to which youth agree with the statement about her/his relationship with teachers. *You feel very close to at least one of your teachers.* Youth rated 1 (*strongly agree*), 2 (*agree*), 3 (*disagree*), or 4 (*strongly disagree*).

Data Analysis

SPSS 16.0 was used to examine the association among ecological protective factors and three children's adjustment outcomes. To answer research questions and test hypotheses, hierarchical regression analyses were applied.

Before hierarchical regression analyses, this study first: 1) conducted data recoding, pre-analysis data screening including missing data analysis and attrition examination to check the accuracy of data entry and examine the generalizability; 2) conducted instrument examination including factor analysis and internal reliability test (Cronbach's alpha) to ensure the quality of scales for this study's population; 3) conducted preliminary data analysis (bi-variable correlation) to provide preliminary information regarding the relationships among predictors and the relationships between predictors and

four adjustment outcomes; and 4) conducted a power analysis to determine the number of predictors.

Hierarchical Regressions

To assess whether the data were appropriate for these regression analyses, first regression assumptions were examined. Researchers suggested two approaches examining the assumptions of multiple regression analyses (Mertler & Vannatta, 2005; Tabachnick & Fidell, 2001). One approach involves the routine pre-analysis data screening procedures. For example, linearity can be evaluated through the bivariate scatterplots. Normality can be evaluated through assessing the values of skewness, kurtosis, Kolmogorov-Smirnov statistics. Homoscedasticity can be assessed through evaluating the results of Box's M test (Mertler & Vannatta, 2005, p.173). The other approach is to examine the residuals' scatterplots.

Because the pre-analysis data screening procedures focus on univariate and bivariate statistics rather than the comprehensive interrelationships among a set of variables in regression models, this study evaluated regression assumptions based on residuals' scatterplots. In other words, a zresid on zpred plot was used to test homoscedasticity of residual error, linearity, and normality. For better visualized judgment, both the zresid histogram and normal probability plot (zresid normal p-p plot) were also used to provide additional information regarding normality. The zresid histogram, normal probability plot, and the zresid on zpred plot were not applied to the educational aspiration model. Because the scale of the dependent variable of the model is

ordinal with three levels, it is not sufficient for testing the regression assumptions of this model (P. Dattalo, personal conversation, April 2009).

In addition, outliers and multicollinearity⁸ issues were also assessed to ensure that data were appropriate for regression analyses. Multicollinearity issues were assessed via bivariate correlations as well as tolerance value. When bivariate correlation $r \geq .8$ or tolerance is close to 0 ($< .2$), multicollinearity could be a problem (Mertler & Vannatta, 2005). Furthermore, because the regression analysis procedure relies on the mean value, the outliers will greatly distort the results. Hence, both information of Cook's D and outlier's identification resulting from regression analysis were used to help decide which outliers should be removed from the research model.

Research Questions and Hypotheses for Aim 1 and 2

To exam the unique contributions of the six *theoretical protective factors* [protective factors based on a review of the literature] on youth adjustment outcomes, separate regression analyses were conducted for each of the four youth adjustment outcomes. All regression analyses follow the same procedure:

First, a hierarchical regression model was used with family financial stress, disorganized community, and the first wave of youth outcome variables entered on step 1 (model 1), and six theoretical protective predictors presenting individual, family, and community systems resources were entered simultaneously on step 2 (model 2).

Second, the F-test for the significance in the change of explained variance (R^2) was used to determine whether the set of the variables in model 2 (entering in step 2)

⁸ Multicollinearity means that a set of predictors are highly correlated with each other (Vogt, 2005)

significantly predicted variance for each outcome variable beyond that of the variables in model 1 (entering in step 1). Because the value of R^2 is affected by the number of predictors, Adjusted R^2 , “a truer (smaller) estimate” of the possibility that predictors explain the variance of dependent variables (Vogt, 2005, p.4) was reported in this study.

Third, for those models (model 2 and 1 in each regression analysis) that were significant, the contribution of each of these six theoretical predictors was determined by the t-test for its associated standardized regression coefficient (Beta, also β). The standardized regression coefficient refers to the amount of change in the outcome variable per unit change of the predictor while controlling for the effects of other predictors (Tabachnick & Fidell, 2001).

For questions 1, 3, and 5 of research Aim 1, only the predictor's β that achieve significance level will be identified as protective factors for this study. For question 2, 4, and 6 of Aim1, the largest β value will be identified in each regression model. For research Aim 2, three predictors— positive self-regulation capability, supportive parent-child relationship, and parental monitoring, were hypothesized as robust protective factors. In this study, a robust protective factor referred to a protective factor that was identified in both the Emotional and Behavior Adjustment Models; Emotional and one of School Adjustment Models; or Behavior Adjustment and one of School Adjustment Models. This study examined whether these four predictors meet the criteria of being a robust protective factor.

Research Questions at Aim 3

The interaction relationship between risk and protective factors was explored. In stead of directly testing a moderating effect in regression models, this study first categorized the research sample into risk-increased and risk-decreased groups, and then conducted hierarchical regression analyses. To identify the *risk-increased group* and *risk-decreased group*, this study took the following four steps:

First, standardized the scores of financial stress and disorganized community at wave 1 and wave 2; second, created a composite risk score by adding the standardized scores of financial stress and disorganized community at wave 1, and the same procedure was used for the wave 2 data; third, the composite risk score at wave 1 was subtracted from the score at wave 2 to create a risk-change variable. The risk-change variable was dichotomized into 1 (above 0 indicating risk-increased) and 0 (0 and below, indicating risk-decreased). In the last step, the dichotomized risk-change variable was used to identify the risk-decreased group (RD) and risk-increased group (RI). After identifying risk-increased and risk-decreased groups, several hierarchical regression analyses were conducted.

To control the effect of the first wave of youth adjustment outcome, this variable was entered in the first step of each regression model (model 1). Next, six theoretical protective factors were entered in the second step of each regression model (model 2). Model summary, ANOVA table, and coefficients table were then used to evaluate each regression model.

CHAPTER 4: RESULTS

Results of the data analysis are presented in six sections: 1) data cleaning and pre-analysis screening; 2) instrument examination; 3) preliminary data and power analysis; 4) bivariate analysis among predictors and between predictors and outcome variables; 5) descriptive data analyses for sample demographics and predictors; and 6) regression analyses corresponding to three research aims.

Cleaning and Pre-Analysis Screening Data

The measures used in this study included both scales and items derived from FACHS. Some items had a reversed code (the high scores were transferred to low scores, or vice versa) to reflect the measured concept. For each item, frequency statistical analysis was used to screen for out-of-range values. In addition, items that measured the same concept were summed together. Standardized scores were used when items were rated on a different point of index.

Because this study used two waves of data, attrition analyses were conducted. From the first wave to second wave, this study lost 18 families, an attrition rate of 14.29 %. Independent samples t test⁹ was used to examine whether the attrition population showed specific characteristics or patterns against this study's interest. The result showed that there were no significant differences between the attrition groups and the remaining groups on the domains examined. In other words, the attrition was more likely to have occurred randomly on these measured domains.

⁹ Researcher recoded the attrition case as 1 and the others as 0 and then used a t-test to evaluate whether these two groups have mean differences in the scores of developmental outcomes of youths at the first wave, family financial stress at the first wave, and disorganized community at the first wave.

Table 2

Evaluation of Attrition (Remaining group n=108; Attrition group n =18)

	T test	<i>p</i> value
Financial stress	-.14	.16
Disorganized community	-1.48	.14
Youth emotional adjustment	1.20	.24
Youth behavioral adjustment	1.7	.11
Youth school performance	-.39	.70
Youth education aspiration	-1.23	.22

Instrument Analysis

Principle component factor analysis with varimax rotation was used for data reduction and to examine whether items of each variable were conceptually and statistically grouped together (DeVellis, 2003; Floyd & Widaman, 1995; Vogt, 2005). When more than one factor was generated by the factor analysis, a factor was selected based on the following criteria: 1) the factor accounted for the most variance; and 2) the factor presented face and content validity¹⁰ (Floyd & Widaman, 1995). Moreover, only items with a factor loading larger than .49 were maintained in the selected factor (Floyd & Widaman, 1995; P. Dattalo, personal communication, September 2, 2008).

Results from the factor analysis showed that almost all variables, except for self-regulation, optimism, and prosocial friend, generated only one factor. For these three scales, the selected factors were the first factor that was extracted from factor analysis because it accounted for the most variance (26.50 % for optimism, 30.20 % for self-regulation, and 41.3% for prosocial friend) and presented face and content validity to

¹⁰ Validity refers to the measure that actually measures what researchers are supposed to measure consistently over time. Both face and content validity are a matter of researchers' or experts' judgment rather than statistical results (DeVellis, 2003; Vogt, 2005).

some degree. In addition, most of remaining items of these selected factors had a .60 and above factor loading. However, since the explained variance in the revised optimism and self-regulation scales was relatively low, this could be a limitation of this study. Further research is needed to evaluate the reliability and validity of the optimism and self-regulation scales across different types of disadvantaged youth. The reliability of these final selected scales ranged from .53-.90 (see Table 3). In general, the value of internal consistency is affected by the number of items (Floyd & Widaman, 1995; Vogt, 2005). Therefore, for the scale of youth educational aspiration that included only two items with a 3-point scale, the reliability of .53 was acceptable.

Table 3

Factor Analysis and Reliability Test of Study Variables

Variable	N of items	Remaining N of items	Internal consistency: Cronbach's alpha
School performance	6	6	.63
Educational aspiration	2	2	.53
Family financial stress	2	2	.73
Disorganized community	7	7	.90
Self-regulation	7	5	.60
Optimism	12	4	.67
Positive parent-child relationship	2	2	.82
Parental monitoring	4	4	.81
Prosocial friend	9	5	.76

Notation: Factor analysis was conducted for research variables that have at least two items with ordinal or interval levels of measurement.

Power Analysis and Preliminary Data Analysis

A statistical power analysis was conducted to estimate the minimally sufficient sample size to identify a moderate effect, assuming a one-tailed alternative hypothesis, $\alpha=.05$, and $\beta=.20$ (Dattalo, 2008). An insufficient sample size increases the probability of committing a type II error, which is failing to reject a false null hypothesis.

In this study, the results of a power analysis suggested that using no more than 10 predictors in research models can help avoid a type II error. Because three theoretical risk predictors (i. e. financial stress, disorganized community, and the first wave of youth outcome) would be pre-assigned to the first step of the regression model (model 1), this study selected six theoretical protective factors from the original proposed theoretical protective factor pool. The criterion to select predictors was that the predictor correlated significantly with at least one of four adjustment variables (youth depressive symptoms, youth conduct disorder symptoms, school performance, and educational aspiration). Six theoretical factors were selected: self-regulation, optimism, positive parent-child relationship, parental monitoring, prosocial friend, and relationship with teacher. Three theoretical protective factors addressed in the research proposal (task orientation, religious/ spiritual belief, and positive parent-child communication) were removed from research model.

Moreover, theoretically, youth gender and presence of a secondary caregiver at home could affect the relationship between parental depression and children's developmental outcomes. Hence, this study proposed controlling for these two variables. However, preliminary data analysis results (independent samples t test) suggested that, in

this study sample, the developmental outcomes did not differ by gender of the youth or the presence of a secondary caregiver at home. For the gender variable, the finding may, in part, result from the age group that was used in this study. Research showed that the effect of gender on children's maladjustment symptoms may vary by their age even though, in general, research tends to suggest that girls are more likely to report more depressive symptoms while boys tend to report more conduct problems (Nomura, Warner, & Wickramaratne, 2001). In addition, as the literature suggests, the quality of relationship between a primary and secondary caregiver, and secondary caregiver's parenting practice could affect the target youths' developmental outcomes (Belgrave & Allison, 2006). The use of the variable *the presence of a secondary caregiver* at home may not sufficiently reflect these specific family relationships. Hence, this study did not include both variables- youth gender and presence of a secondary caregiver at home- in the research models. Table 5 shows the t-test result.

A preliminary data analysis was used to help select a final stress scale from per-capita income and inability to make ends meet. Previous studies have suggested that financial stress often co-occur in a family with a parent with depression (Hammen, 1991, 1993; Hans, 2005; Samaan, 2000). This indicates that families with a member with depression tend to face more financial stress than families without a member with depression. Hence, a good financial stress scale for this study should be able to differentiate these two types of families. With this idea, this study intended to use the scale that could better differentiate the financial stress between 126 families with a

member with depression and 772 families¹¹ without a member with depression. An independent samples t test result showed that these two groups achieved significant differences on the scores of inability to make ends meet ($t=2.96, p=.004$), but not on the scores of per-capita income ($t=1.251, p=.211$). Hence, the scale of inability to make ends meet was selected because it measured this population's financial stress both conceptually and statistically. A possible explanation for why the scale of per-capita income failed to distinguish between these two groups is the high level of homogeneity of family income among the total 898 African American families.

Table 4

Preliminary Data Analysis for Protective Factors and Outcomes

Models	Emotional adjustment	Behavioral adjustment	School performance	Educational aspiration
Predictors				
Self-regulation	-.11	-.28**	.17	-.04
Task orientation	-.11	-.06	.14	-.01
Religious belief	.08	.01	.062	.08
Optimism	-.26**	-.08	.20*	.06
Positive parent-child relationship	-.10	-.16	.34**	-.09
Parental monitoring	-.01	-.26**	.36**	.20*
Parent-child communication	.10	-.12	.17	.17
Prosocial friend	-.06	-.23*	.14	.09
Teacher support	.19*	.08	.07	.26**

Notation: Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Principle component factor analysis with varimax rotation was used for each variable before this preliminary data analysis. Emotional Adjustment Model was measured by youths' depression scores. Behavior Adjustment Model was measured by youths' conduct disorder symptoms.

¹¹ FACHS originally included 898 African American families. In addition to 126 families where a primary caregiver had a life time depression diagnosis, the remaining 772 families were categorized as non-depression families.

Table 5
Preliminary Data Analysis for Control Variables (N=108)

	Gender		Secondary caregiver at home	
	<u>Girl/ Boy</u>	t-test (<i>p</i> value)	<u>Yes / No</u>	t-test (<i>p</i> value)
Emotional adjustment	7.86 vs. 6.82	-1.15 (.25)	7.02 vs. 7.67	-.72 (.47)
Behavioral adjustment	2.98 vs. 3.39	.69 (.49)	3.04 vs. 3.29	-.42 (.67)
School engagement	20.35 vs. 19.46	-1.56 (.12)	20.37 vs. 19.57	-.14 (.17)
Education aspiration	5.67 vs. 5.50	-1.31 (.19)	5.57 vs. 5.60	-.25 (.80)

Bivariate Analysis

First of all, Table 6 showed that correlations of any bi-variables were less than .5, an indication of no multicollinearity¹² problems in these research variables. Second, as expected, financial stress of wave 1 and disorganized community of wave 1 correlated significantly with each other (Pearson's $r = .25, p < .01$). Third, all protective factors of wave 2 correlated significantly with at least one of the developmental outcome variables of wave 2. Youths' depressive symptoms of wave 2 correlated significantly with optimism and relationship with teacher (Pearson's $r = -.26, p < .01$ and $r = .19, p < .05$ respectively). Youths' conduct disorder symptoms of wave 2 correlated significantly with self-regulation, parental monitoring, and prosocial friend (Pearson's $r = -.28, p < .01$; $r = -.26, p < .01$; and $r = -.23, p < .05$ respectively). Youths' school performance of wave 2 correlated significantly with optimism, positive parent-child relationship, and parental monitoring (Pearson's $r = .20, p < .05$; $r = .34, p < .001$; and $r = .36, p < .001$ respectively).

¹² P. Dattalo suggests that predictors with a correlation $> .5$ should be carefully examined to decide whether these factors are supported by sufficient theory to remain in the model (personal communication, September 14, 2008).

Youths' educational aspiration of wave 2 correlated significantly with parental monitoring and relationship with teacher of wave 2 (Pearson's $r = .20$, $p < .05$; and $r = .26$, $p < .01$ respectively). Based primarily on the correlation results, youths' optimism and parental mentoring were more likely to be robust protective factors for research models since each variable correlated significantly with at least two of youths' developmental outcomes.

It should be noted that teacher support was positively associated with youths' depressive symptoms. Because both variables were measured at the same wave, no causal effect between two variables was warranted. Hence, the correlation could reflect that teachers pay more attention to youths who had symptoms of depression or perhaps youths with depression were more likely to seek out teachers' support.

Finally, regarding the relationship between risk factors and youths' outcomes, one unexpected result was found in this preliminary correlation analysis. This study found that wave1 financial stress correlated significantly with wave1 youths' depressive symptoms (Pearson's $r = .21$, $p < .05$). However, the researcher initially expected that financial stress and disorganized community would correlate significantly with at least one of youths' developmental outcomes based on suggestions from the literature. Previous literature suggested that: 1) a disorganized community is related to mental health problems (Aldridge & Becker, 2003; Belgrave & Allison, 2006); and/or 2) living in a disorganized environment could, therefore, become another risk along with parental depression affecting children's developmental outcomes (Belgrave & Allison, 2006; Cutrona et al., 2005). With this information, this study held two premises: 1) a family

with a parent with depression was more likely to report higher levels of disorganized community compared to a family without a parent with depression; and 2) disorganized community correlated with at least one developmental outcome.

The second premise was not supported by this study's preliminary correlation analysis. The first premise was supported by an additional statistical analysis. A t-test result showed that depression families reported a higher score in the measure of disorganized community than non-depression families ($t=2.40$, $p=.018$, mean scores for depressed family was 3.94 and for non-depressed families was 3.71). However, it is unsure that whether the difference can be observable in the real world since the practical difference between groups was less than one scale point. This warrants future research and exploration in practice.

Together, these results may suggest that, for this sample population, the risk effect of a disorganized community was more likely to directly impact these primary caregivers than the adjustment outcomes of these youths. However, considering disorganized community was associated with a primary caregiver's depression, indicating a distal risk to these youths' development, this study kept this variable in the research models for theoretical reasons.

Table 6

Correlations of All Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. FS <i>wI</i>	--															
2. DC <i>wI</i>	.25	--														
3. EmA	.09	.01	--													
4. BA	-.02	-.03	.33	--												
5. SP	.08	-.04	-.08	-.28	--											
6. EA	-.13	-.04	.10	.18	.10	--										
7. EmA <i>wI</i>	.21	.01	.25	.14	-.16	-.02	--									
8. BA <i>wI</i>	.01	-.07	.18	.34	-.31	-.05	.49	--								
9. SP <i>wI</i>	.07	-.10	.03	-.11	.19	.20	-.15	-.36	--							
10. EA <i>wI</i>	.01	.08	.19	.15	.01	.22	.012	-.12	.18	--						
11. SR	.14	-.10	-.11	-.28	.17	-.04	.13	-.12	.15	.01	--					
12. OP	.15	.04	-.26	-.08	.20	.06	-.13	-.12	-.01	.17	.14	--				
13. PCR	.07	-.08	-.10	-.16	.34	-.09	-.01	-.02	.01	-.01	.07	-.01	--			
14. PM	-.16	-.18	-.01	-.26	.36	.20	.05	-.07	.17	.02	.17	.08	.37	--		
15. PF	-.05	.12	-.06	-.23	.14	.09	-.08	-.17	.06	-.06	.15	.06	.16	.11	--	
16. RT	.02	.01	.19	.08	.07	.26	-.03	-.06	.25	.07	.05	-.22	-.10	.02	-.01	--
Mean	6.18	10.82	7.37	3.18	19.93	5.59	6.85	2.23	20.16	5.39	10.90	10.08	7.28	13.19	13.61	2.96
SD	2.23	3.94	4.66	3.09	2.96	.66	5.26	3.17	2.46	.83	2.15	2.28	1.04	2.90	1.71	.96

Note: All correlations greater than .17 are significant at $p < .05$. *wI*=Wave 1, otherwise Wave 2. Standard deviation=SD.

Family financial stress [FS], Disorganized community [DC], Emotional adjustment [EmA], Behavioral adjustment [BA], School performance [SP], Educational aspiration [EA], Self-regulation [SR], Optimism [OP], The positive parent-child relationship [PCR], Parental monitoring [PM], Prosocial friend [PF], Teacher support [TS].

Sample Demographics

The sample sizes based on gender were almost equal (total=126; girls=64, 50.8 %; boys=62, 49.2 %). In contrast, almost 97 % of the primary caregivers were female (n=122) while only about 3 % were male (n=4). Eighty-eight percent (n=111) of primary caregivers identified themselves as mother of the target youth; about 5 % (n=6) as adoptive parent; and about 4 % as father (n=2) or grandmother (n=2). Given that 95 % of primary caregivers of this research sample reported themselves as youths' parents or functioned in a parental role (e.g. grandmother), this study simply referred to these primary caregivers as parents. The mean age for youth at the first wave was 10.46 years and 36.84 years for primary caregivers. A majority of youths (n=113, 89.7 %) and primary caregivers (n=107, 84.9 %) identified themselves as African American. In addition, 56 out of 120 families reported having a secondary caregiver at home. Among the families with a secondary caregiver at home, 44.6 % (n=25) identified as father of the target youth, 17.9 % (n=10) as stepfather, and 8.9 % (n=5) as grandmother.

Table 7

Demographic Statistics of Sample

	Mean	Range	Frequency	Percentage
Youth gender				
Male	--	--	62	49.2%
Female	--	--	64	50.8%
PC gender				
Male	--	--	4	3.2%
Female	--	--	122	96.8%
Youth age	10.46	10-12	--	--
PC age	36.84	11 ¹³ -78	--	--
Youth ethnicity				
African American			113	89.7 %
Mixed Ethnicity			11	8.7%
Other			1	0.8 %
PC ethnicity				
African American			107	84.9 %
Caucasian			15	11.9%
Other			3	2.4%
Relationship of PC to youth				
Mother			111	88.1 %
Adoptive parent			6	4.8%
Other ¹⁴			4	3.2%
Father			2	1.6%
Grandmother			2	1.6%
Relationship SC to youth				
Father			25	44.6%
Stepfather			10	17.9%
Other ¹⁵			6	10.7%
Grandmother			5	8.9%
Sibling			5	8.9%
Mother			2	3.6%
Adoptive/ Foster parent			2	3.6%

Note: Missing data n=1 (1.8 %). Primary caregiver [PC]. Secondary caregiver [SC].

¹³ A few primary caregivers referred themselves as the brother or sister of the target youth; therefore, they could be 11 years old.

¹⁴ Other includes aunt and sibling etc..

¹⁵ Other includes father's significant others etc..

Regression Analysis

Several hierarchical regressions were conducted to test research hypotheses and explore questions. The results of regression assumption examinations-zresid on zpred plot, zresid histogram, and normal probability plot/zresid normal p-p plot-showed that research data were congruent with regression assumptions. In other words, no significant problems related to multicollinearity, normality, linearity, and homoscedasticity in regression models. Outliers were identified and removed from models. Specifically, one outlier was removed from the educational aspiration model, two outliers were removed from the school performance model, and four outliers were removed from the behavioral adjustment model. No outlier was found in the emotional adjustment model.

In the multivariate regression models, an F-test was used to evaluate the significance of the model. For those models that were significant, t-test was used to evaluate the significance of individual predictors. Adjusted R^2 was used to evaluate how much variance of the model was explained by predictors. Tables 8-11 present the results of regression analyses for the first three research questions of research Aim 3. Figures 1-8 provide the results of regression assumptions examinations.

Emotional Adjustment Model

For the model predicting youth emotional adjustment (measured by youths' second wave of depression scores), the final regression model showed that overall the model was statistically significant, $F(9, 95) = 2.495, p = .013$. The model explains 11.5 % of the variance of youths' second wave of depression scores ($R^2_{adj} = .115$). Among six theoretical predictors, only optimism ($\beta = -.215, t = -2.147, p = .034$) was significant. The

depression scores at the first wave also significantly contributed to this model ($\beta = .244$, $t = 2.503$, $p = .014$). With other variables held constant, youths' second wave of depression scores were positively related to the first wave of depression scores, increasing by .244 for every increased score of depression at the first wave. In contrast, youths' emotional adjustment scores were negatively related to optimism, decreasing by .215 for every increased score of optimism.

Table8

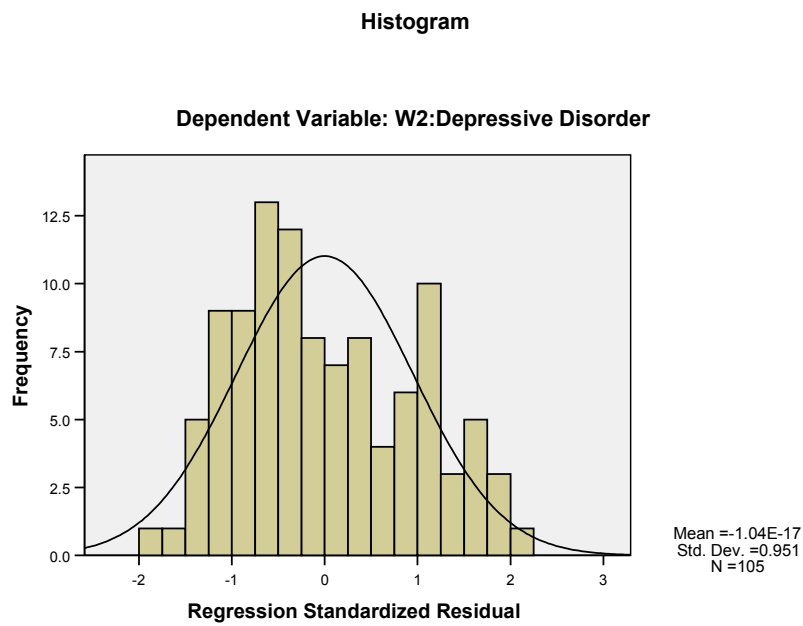
Hierarchical Regression Results of Emotional Adjustment

	B	Std. Error	Beta/ β	95 % Confidence Interval for B	
				Lower	Upper
Model 1					
(Constant)	4.568	1.656			
W1: Financial stress	.029	.207	.014	-.382	.440
W1: Disorganized community	.100	.114	.087	-.126	.327
W1: Depression	.251	.089	.272*	.074	.429
R² change=.085					
R²_{adj} =.058					
F (3, 101)=3.136,					
p=.029*					
Model 2					
(Constant)	9.657	5.426		-1.115	20.428
W1: Financial stress	.183	.214	.089	-.241	.608
W1: Disorganized community	.083	.115	.071	-.145	.311
W1: Depression	.226	.090	.244*	.047	.405
Self-regulation	-.244	.218	-.111	-.676	.188
Optimism	-.448	.209	-.215*	-.862	-.034
Positive parent-child relationship	-.444	.462	-.099	-1.361	.473
Parental monitoring	.149	.168	.093	-.185	.484
Prosocial friend	.041	.263	.015	-.480	.563
Teacher support	.739	.466	.153	-.186	1.665
R² change=.063					
R²_{adj} =.115					
F (9,95)=2.495,					
p=.013*					

Note: + $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$. W1=Wave 1, otherwise Wave 2.

Figure 3

Assessment of Regression Assumption for Emotional Adjustment 1



Normal P-P Plot of Regression Standardized Residual

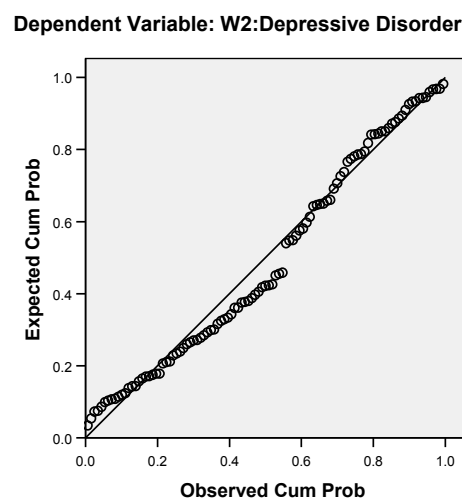
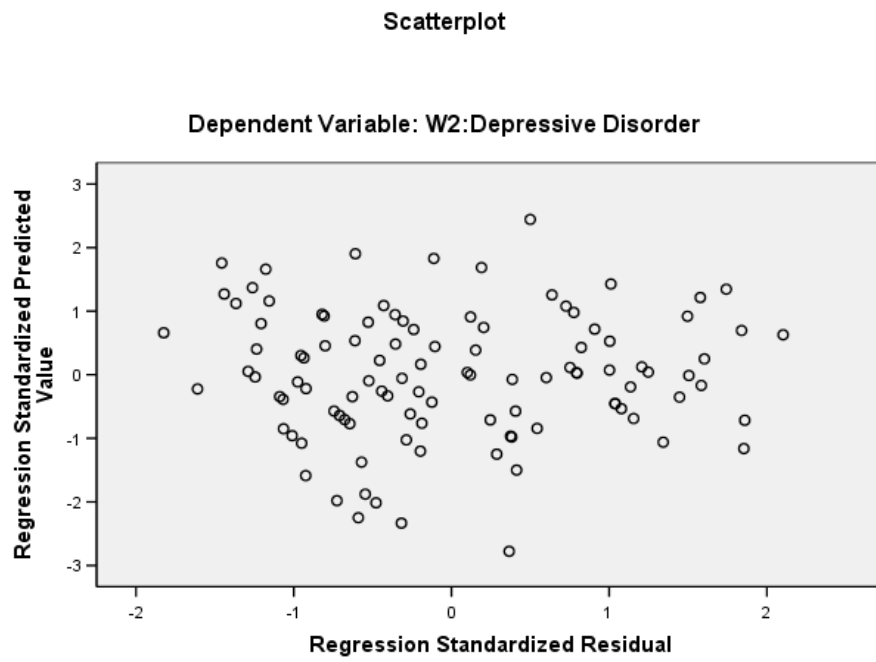


Figure 4

Assessment of Regression Assumption for Emotional Adjustment 2



Behavior Adjustment Model

For the model predicting youth behavior adjustment (measured by youths' second wave of conduct disorder symptoms), the final regression model showed that overall the model was statistically significant, $F(9, 91) = 5.714, p < .00005$. The model explained 29.8% of the variance of youths' second wave of conduct disorder symptoms ($R^2_{\text{adj}} = .298$). Among six theoretical predictors in the individual-family-community level, the effect of children's self regulation ($\beta = -.210, t = -2.362, p = .020$), parental monitoring ($\beta = -.250, t = -2.628, p = .010$), and prosocial friend ($\beta = -.187, t = -2.107, p = .038$) significantly contributed to the behavior adjustment model. The conduct disorder symptoms at the first wave also significantly contributed to this model ($\beta = .377, t = 4.318, p < .00005$). With other variables held constant, youths' behavior adjustment scores were positively related to the first wave of conduct disorder symptoms, increasing by .377 for every increased score of conduct behavior at the first wave. In contrast, youths' second wave of conduct disorder symptoms were negatively related to self regulation, parental monitoring, and prosocial friend decreasing by .210, .250, and .187 for every increased score of self regulation, parental monitoring, and prosocial friend respectively. Among these three protective factors, parental monitoring best accounted for the variance in the Behavioral Adjustment Model.

Table 9

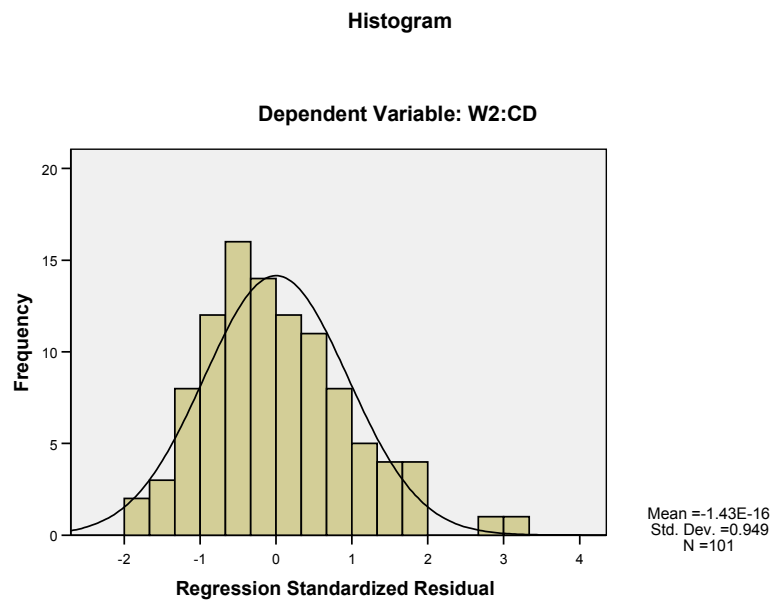
Hierarchical Regression Results of Behavioral Adjustment

	B	Std. Error	Beta/ β	95 % Confidence Interval for B	
				Lower	Upper
Model 1					
(Constant)	2.192	.853			
W1: Financial stress	-.047	.103	-.044	-.252	.157
W1: Disorganized community	.003	.057	.004	-.111	.116
W1: Conduct disorder symptoms	.475	.102	.428***	.273	.678
R² change=.187					
R²_{adj} =.162					
F (3,97)=7.453					
P<.00005					
Model 2					
(Constant)	10.049	2.643			
W1: Financial stress	-.079	.101	-.073	-.280	.121
W1: Disorganized community	-.025	.054	-.042	-.133	.082
W1: Conduct disorder symptoms	.419	.097	.377***	.226	.612
Self-regulation	-.240	.102	-.210*	-.442	-.038
Optimism	.123	.100	.113	-.075	.321
Positive parent-child relationship	-.040	.216	-.017	-.470	.390
Parental monitoring	-.215	.082	-.250*	-.377	-.052
Prosocial friend	-.265	.126	-.187*	-.515	-.015
Teacher support	.282	.222	.111	-.158	.723
R² change=.174					
R²_{adj} =.298					
F (9,91)=5.714					
P<.00005					

Note: + $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$. W1=Wave 1, otherwise Wave 2.

Figure 5

Assessment of Regression Assumption for Behavioral Adjustment 1



Note: CD=Conduct Disorder Symptoms

Normal P-P Plot of Regression Standardized Residual

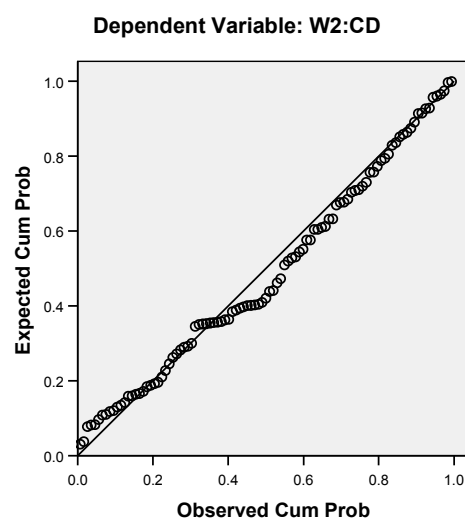
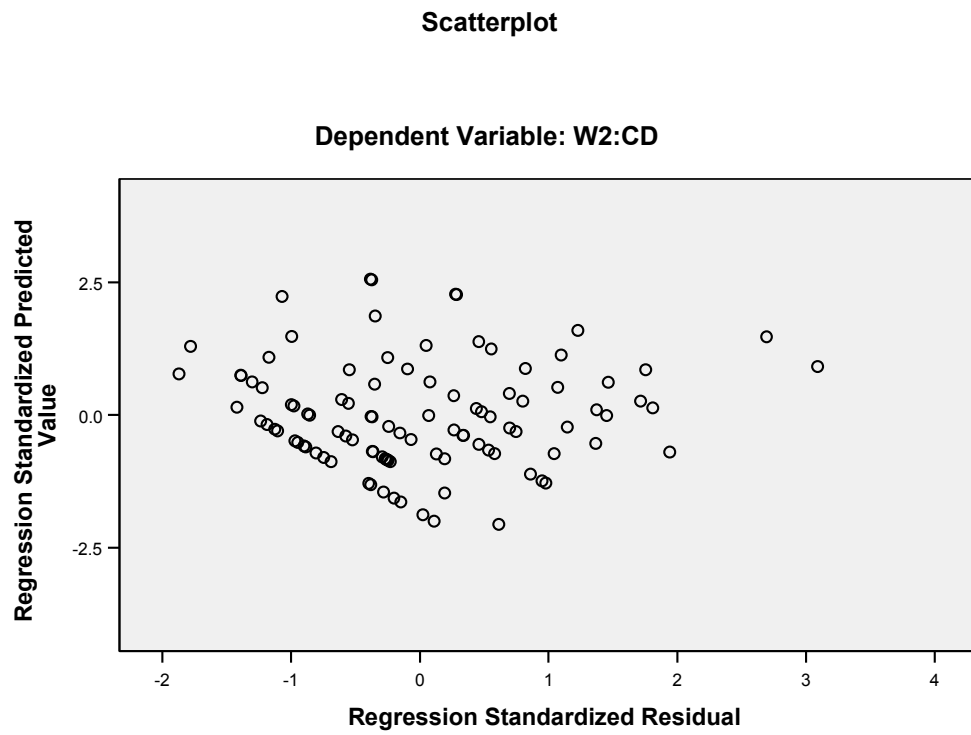


Figure 6

Assessment of Regression Assumption for Behavioral Adjustment 2



School Performance Model

For the model predicting youth school performance (measured by youths' second wave of school performance scores), the final regression model showed that overall the model was statistically significant, $F(9, 89) = 2.951, p = .004$. The model explained 15.2 % of the variance of youths' second wave of school performance scores ($R^2_{adj} = .152$). Among six theoretical predictors, only the effect of parental monitoring ($\beta = .189, t = .1821, p = .072$) significantly contributed to the school performance model. The school performance of the first wave also significantly contributed to this model ($\beta = .198, t = 1.993, p = .049$).

With other variables held constant, youths' second wave of school performance scores were positively related to the first wave of school performance scores and parental monitoring, increasing by .198 for every increased score of school performance scores at the first wave and by .189 for every increased score of parental monitoring.

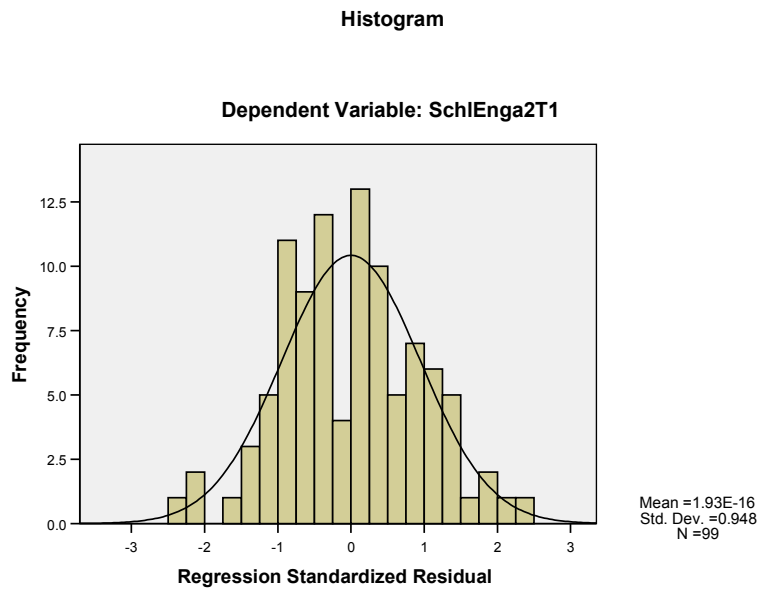
Table 10

Hierarchical Regression Results of School Performance

	B	Std. Error	Beta/ β	95 % Confidence Interval for B	
				Lower	Upper
Model 1					
(Constant)	15.012	2.277			
W1: Financial stress	-.012	.116	-.011	-.243	.219
W1: Disorganized community	-.072	.064	-.112	-.200	.056
W1: School performance	.296	.105	.279**	.089	.504
R²change=.095					
R²_{adj}=.066					
F (3,95)=3.311					
p=.023					
Model 2					
(Constant)	5.423	3.484			
W1: Financial stress	.017	.118	.015	-.218	.252
W1: Disorganized community	-.052	.065	-.082	-.181	.076
W1: School performance	.210	.105	.198*	.001	.419
Self-regulation	.114	.118	.096	-.120	.349
Optimism	.168	.117	.143	-.064	.400
Positive parent-child relationship	.280	.284	.098	-.284	.844
Parental monitoring	.180	.099	.189+	-.016	.376
Prosocial friend	.226	.147	.153	-.066	.519
Teacher support	.165	.261	.063	-.353	.683
R²change=.135					
R²_{adj}=.152					
F (9,89)=2.951,					
p=.004					

Note: + $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$. W1=Wave 1, otherwise Wave 2.

Figure 7
Assessment of Regression Assumption for School Performance 1



Note: SchlEnga2T1=School performance

Normal P-P Plot of Regression Standardized Residual

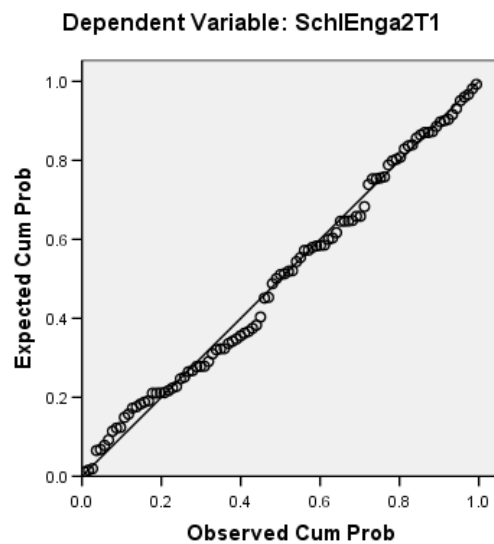
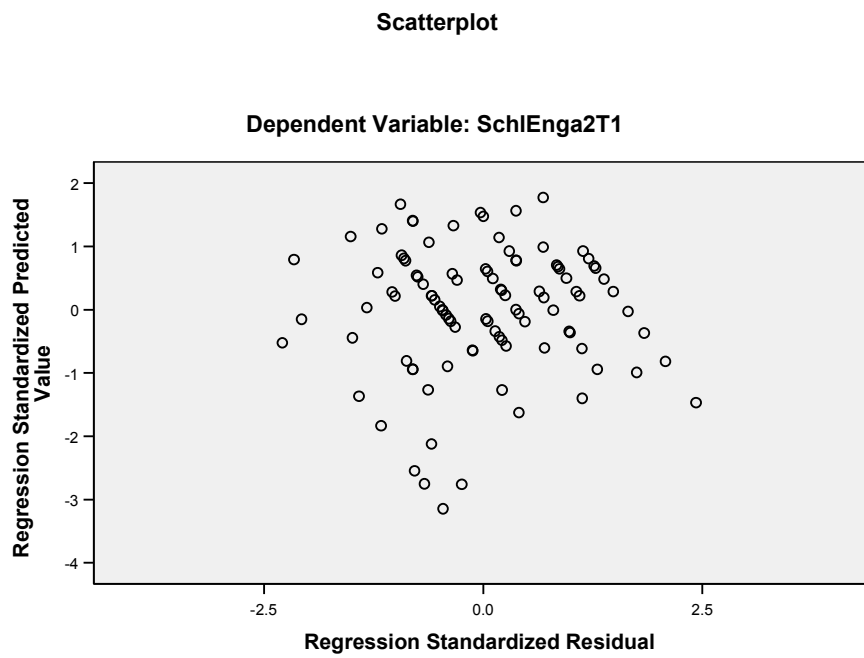


Figure 8

Assessment of Regression Assumption for School Performance 2



Educational Aspiration Model

For the model predicting youth educational aspiration (measured by youths' second wave of educational aspiration scores), the final regression model showed that overall the model was statistically significant, $F(9, 94) = 3.639, p = .001$. The model explained 18.7 % of the variance of youths' second wave of educational aspiration scores ($R^2_{adj} = .187$).

Among six theoretical predictors, parental monitoring ($\beta = .278, t = 2.788, p = .006$), and teacher support ($\beta = .292, t = 3.150, p = .002$) significantly contributed to the educational aspiration model. The educational aspiration scores at the first wave also significantly contributed to this model ($\beta = .234, t = 2.559, p = .012$).

With other variables held constant, youths' second wave of educational aspiration scores were positively related to the first wave of educational aspiration scores, increasing by .234 for every increased score of educational aspiration at the first wave. In addition, youths' educational aspiration scores were also positively related to parental monitoring and teacher support, increasing by .278 and .292 for every increased score of parental monitoring and teacher support respectively. Among these two protective factors, teacher support best accounted for the variance in the Educational Aspiration Model.

Table 11

Hierarchical Regression Results of Educational Aspiration

	B	Std. Error	Beta/ β	95 % Confidence Interval for B	
				Lower	Upper
Model 1					
(Constant)	4.709	.451			
W1: Financial stress	-.029	.028	-.106	-.084	.025
W1: Disorganized community	-.006	.015	-.038	-.036	.025
W1: Education aspiration	.213	.074	.274**	.065	.360
R² change=.089					
R²_{adj}=.062					
F (3,100)=3.269					
p=.024					
Model 2					
(Constant)	3.537	.768			
W1: Financial stress	-.015	.027	-.052	-.069	.040
W1: Disorganized community	-.006	.015	-.037	-.035	.024
W1: Education aspiration	.182	.071	.234*	.041	.322
Self-regulation	-.023	.028	-.080	-.079	.032
Optimism	.027	.027	.098	-.026	.081
Positive parent-child relationship	-.082	.059	-.137	-.200	.035
Parental monitoring	.060	.022	.278**	.017	.103
Prosocial friend	.035	.034	.095	-.032	.102
Teacher support	.190	.060	.292**	.070	.310
R² change=.169					
R²_{adj}=.187					
F (9,94)=3.639,					
p=.001					

Note: + $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$. W1=Wave 1, otherwise Wave 2.

Table 12

Protective Factors Correlated Significantly with Outcome Variables

Models	Emotional adjustment	Behavioral adjustment	School performance	Educational aspiration
Protective factors (Beta/ β)	Optimism (-.215)	Self-regulation (-.210) Parental monitoring (-.250) Prosocial friend (-.187)	Parental monitoring (.189)	Parental monitoring (.278) Teacher support (.292)

Interaction model

Table 13

Sample Sizes of Risk-Increased and Risk-Decreased Groups

Models	Emotional adjustment (N=126)		Behavioral adjustment (N=122)		School performance (N=124)		Educational aspiration (N=125)	
	RI	RD	RI	RD	RI	RD	RI	RD
Number of cases	48	58	46	56	46	58	48	57
Missing	20		20		20		20	

Note: Risk-increased groups [RI]. Risk-decreased group [RD]. Each model has different number of cases because different numbers of outliers were removed from the model.

To explore the interactive relationship between risk and protective factors, first *risk-increased* and *risk-decreased* groups were identified and then separate regression models

were run. Table 13 shows the sample size for each risk-increased and risk-decreased group. The power analysis results¹⁶ indicated that the sample size of each group was not sufficient to test all predictors of this study. Hence, hierarchical regression analyses would be less likely to identify the predictors that significantly contribute to the models.

For each risk-increased and risk-decreased group, a hierarchical regression analysis was used with the first wave of youths' outcomes entered on step 1, and the six theoretically protective factors entered simultaneously on step 2. The regression analyses results may be problematic. Several regression models did not achieve a significant difference: Emotional Adjustment-RI model, $F(7, 40) = 1.978, p = .082$; Emotional Adjustment-RD, $F(7, 49) = 1.772, p = .114$; Behavioral Adjustment-RD, $F(7, 37) = .803, p = .590$; and School Performance-RI, $F(7, 47) = 2.129, p = .059$.

It is quite possible that insufficient statistical power was a key reason contributing to the non-significant findings. The following reports show the hierarchical regression analyses models that were statistically significant including: Behavioral adjustment-RI, School performance-RD, Education Aspiration-RI, and Education Aspiration-RD.

Behavioral Adjustment-Risk Increased Model (BA-RI)

For the model predicting BA-RI (measured by youths' second wave of conduct disorder symptoms), the final regression model showed that overall the model was statistically significant, $F(7, 38) = 4.421, p = .001$. The model explains 34.7 % of variance of youths' second wave of conduct disorder symptoms ($R^2_{adj} = .347$). Among six theoretical predictors, only youths' self regulation ($\beta = -.258, t = -1.959, p = .057$)

¹⁶ At 80 % power, the minimum sample size to get medium effect ($R^2 = .15$) should be 90 when 7 predictors are in a model. None these risk-increased or-decreased groups had 90 cases.

significantly contributed to the behavior adjustment model. The conduct disorder symptoms at the first wave also significantly contributed to this model ($\beta = .464, t = 3.717, p = .001$). With other variables held constant, youths' second wave of conduct disorder symptoms were positively related to the first wave of conduct disorder symptoms, increasing by .464 for every increased score of conduct behavior at the first wave. In contrast, youths' conduct disorder symptoms at wave 2 were negatively related to self regulation, decreasing by .258 for every increased score of self regulation.

School Performance-Risk Decreased Model (SP-RD)

For the model predicting SP-RD (measured by youths' second wave of school performance scores), the final regression model showed that overall the model was statistically significant, $F(7, 46) = 3.342, p = .006$. The model explains 23.6% of variance of youths' second wave of school performance scores ($R^2_{adj} = .236$). Among six theoretical predictors, only parental monitoring ($\beta = .284, t = 2.038, p = .047$) significantly contributed to the School Performance Model. The school performance of the first wave did not significantly contribute to this model. With other variables held constant, youths' second wave of school performance scores were positively related to parental monitoring, increasing by .284 for every increased score of parental monitoring.

Educational Aspiration-Risk Increased Model (EA-RI)

For the model predicting EA-RI, the final regression model showed that overall the model was statistically significant, $F(7, 38) = 2.269, p = .049$. The model explained 16.5 % of variance of youths' second wave of educational aspiration scores ($R^2_{adj} = .165$). Among six theoretical predictors, parental monitoring ($\beta = .296, t = 1.973, p = .056$), and teacher

support ($\beta = .334, t = 2.243, p = .031$) significantly contributed to the educational aspiration model. The educational aspiration scores of the first wave did not significantly contribute to this model. With other variables held constant, youths' educational aspiration scores were positively related to parental monitoring and teacher support, increasing by .296 and .334 for every increased score of parental monitoring and teacher support respectively.

Educational Aspiration-Risk Decreased Model (EA-RD)

For the model predicting EA-RD, the final regression model showed that overall the model was statistically significant, $F(7, 48) = 2.811, p = .016$. The model explained 18.7 % of the variance of youth's second wave of educational aspiration scores ($R^2_{adj} = .187$). Among six theoretical protective factors, only parental monitoring ($\beta = .338, t = 2.383, p = .021$) significantly contributed to this model. The educational aspiration scores at the first wave also significantly contributed to this model ($\beta = .280, t = 2.103, p = .041$). With other variables held constant, youths' second wave of educational aspiration scores were positively related to the first wave of educational aspiration scores, increasing by .280 for every increased score of educational aspiration at the first wave. In addition, youths' educational aspiration scores were also positively related to parental monitoring, increasing by .338 for every increased score of parental monitoring. Table 14 summarizes the protective factors in these risk-increased and risk-decreased groups.

Table 14

Significant Protective Factors of Risk-Increased &-Decreased Groups

Models	Emotional adjustment		Behavioral adjustment		School performance		Educational aspiration	
	<u>RI</u>	<u>RD</u>	<u>RI</u>	<u>RD</u>	<u>RI</u>	<u>RD</u>	<u>RI</u>	<u>RD</u>
Protective factors (Beta/ β)	N/A	N/A	SR (-.258)	N/A	N/A	PM (.284)	PM (.296) TS (.334)	PM (.338)

Note: Not applicable, because the model does not achieve significant difference [N/A]. Risk-increased groups [RI]. Risk-decreased group [RD]. Self-regulation [SR]. Parental monitoring [PM]. Teacher support [TS].

Summary of Research Questions at Aim 1 & 2

Aim 1: To explore the association between ecological protective factors and four outcomes- Emotional Adjustment, Behavioral Adjustment, School Performance, and Educational Aspiration Model - in youths who have multiple risk factors (having a parent with depression, are facing financial stress, and living in a disorganized community).

Question 1: What are the protective factors for the Emotional Adjustment Model of the target youths?

Youths' optimism was the only protective factor for the emotional adjustment model. Emotional adjustment scores at the second wave were negatively related to optimism, decreasing by .215 for every increased score of optimism. Specifically, youths with higher levels of optimism reported lower levels of depressive symptoms.

Question 2: What particular protective factors best account for the variance in the Emotional Adjustment Model?

Youths' optimism best accounted for the variance in the Emotional Adjustment Model.

Question 3: What are the protective factors for the Behavioral Adjustment Model of the target youths?

Youths' self regulation, prosocial friend, and parental monitoring were protective factors for the Behavioral Adjustment Model. Specifically, youths with higher levels of self-regulation, greater parental monitoring, and more positive appraisal of prosocial friends' responses toward their academic plans and positive activities reported lower levels of conduct disorder symptoms. Youths' second wave of conduct disorder symptoms were negatively related to self regulation, prosocial friend, and parental monitoring, decreasing by .210, .250, and .187 for every increased score of self regulation, parental monitoring, and prosocial friend respectively.

Question 4: What particular protective factors best account for the variance in the Behavioral Adjustment Model?

Among the three protective factors, parental monitoring best accounted for the variance in the Behavioral Adjustment Model.

Question 5: What are the protective factors for the School Performance Model of the target youths?

Parental monitoring was the only protective factor for the school performance model. Specifically, youths with higher levels of parental monitoring reported higher levels of school performance. With other variables held constant, the second wave of

school performance scores were positively related to parental monitoring, increasing by .189 for every increased score of parental monitoring.

Question 6: What particular protective factors best account for the variance in the School Performance Model?

Parental monitoring best accounted for the variance in this model.

Question 7: What are the protective factors for the Educational Aspiration Model of the target youths?

Parental monitoring and teacher support were protective factors for the Educational Aspiration Model. With other variables held constant, youths' second wave of educational aspiration scores were positively related to parental monitoring and teacher support, increasing by .278 and .292 for every increased score of parental monitoring and teacher support respectively. Specifically, youths with higher levels of parental monitoring, and positive appraisals of a relationship with teacher reported higher levels of educational aspiration.

Question 8: What particular protective factors best account for the variance in the Education Aspiration Model?

Among these two protective factors, teacher support best accounted for the variance in the Educational Aspiration Model.

Aim 2: To identify the robust protective factors for these target youths.

Question 1: Do the robust protective factors exist in this research sample?

In other words, do specific protective factors have a broad range of protection across at least two domains of developmental outcomes in this research sample?

This study suggests that overall, with the exception of parental monitoring, these theoretical protective factors only operated in specific developmental domains. Only parental monitoring was identified as a robust protective factor for this population. Specifically, youths with higher appraisals of parental monitoring reported fewer levels of conduct behavior symptoms, and higher school performance and educational aspiration.

Summary of Research Questions at Aim 3

Aim 3: To explore the interactive relationships between risk and robust protective factors.

Question 1: Under the conditions of high levels of risk effect, how do robust protective factors react to the conditions?

As mentioned earlier, for this population, only parental monitoring was identified as a robust protective factor for youths in this study. When further separating the whole sample into risk-increased and risk-decreased groups, parental monitoring functioned as a protective factor for youth school performance for risk-decreased group and for youth educational aspiration in both risk-increased and risk-decreased groups. Because several regression models did not achieve statistically significant differences in overall models (both model 1 and model 2, or model 2), the interaction test was only available in both educational aspiration risk-increased and risk-decreased models.

To explore whether the effect of parental monitoring varies by the risk level, the *Chow test* was used. The Chow test is used to examine whether coefficients in two regression models (meaning models for risk-increased and risk-decreased groups in this study) are equal. The result of Chow test will be problematic if two groups have

extremely unequal sample sizes. In this study, the sample sizes of the risk-increased and risk-decreased groups of educational aspiration models were close (48 vs. 57). Hence, the result of Chow test should be reliable. The result of Chow test showed that, in this population (risk-increased and risk-decreased groups of Educational Aspiration Models), the difference of parental monitoring of these two groups was not statistically significant, $F(1, 95) = .112, p = .739$. In other words, the effect of parental monitoring on youths' educational aspiration did not vary by the change of financial stress and disorganized community.

Question 2: Under the conditions of high levels of risk, how do other protective factors react to the conditions?

In addition to parental monitoring, only youths' self regulation functioned as a protective factor for the risk-increased youths' behavioral adjustment, and teacher support functioned as a protective factor for risk– increased youths' education aspiration.

Question 3: Would new robust protective factors develop when the risk effect increases?

This study did not identify any new robust protective factors. However, this result may be due to the insufficient statistical power.

CHAPTER 5: DISCUSSION

Children of a parent with major depression have been viewed as at-risk for developing various types of maladjustments, particularly depression, anxiety, conduct problems, and school maladjustment (Beardslee, Versage, & Gladston, 1998; Doewney & Coyne, 1990; Hammen & Brenna, 2001). Other stressors associated with parental depression, particularly financial stress, disorganized neighborhood, and family conflict may trigger children's maladjustment directly or indirectly (Aldridge & Becker, 2003; Hans, 2005; Mordoch & Hall, 2002).

Although results from resilience research have suggested several protective factors, some knowledge gaps in this area of research may have impeded helping professionals from effectively addressing these families' needs. These knowledge gaps are mainly due to insufficient empirical evidence using community based samples, particularly from rural and poor areas, and a lack of longitudinal studies. In addition, past studies were less likely to include co-occurring risk factors with parental depression and multiple ecological protective factors in research models, examine the interactive effect between protective and risk factors, and identify robust protective factors.

By using an existing longitudinal data set that sampled rural and poor youths and families, this study was able to address these knowledge gaps to some degree. The overarching goals of this study were to identify the (robust) protective factors for youths who had a primary caregiver with a diagnosis of depression, lived in a disorganized community, and faced financial stressors.

The results of this study suggested the following protective factors are associated with the favorable outcomes for these target youths: youths' optimistic characteristics, self-regulation capacity, parental monitoring skills, prosocial friends' support, and supportive teachers. In addition, this study suggested that most protective factors tend to function in specific developmental domains. Only parental monitoring provided a broad protection against the risks across the youths' different developmental domains regardless of risk levels. Detailed discussion of research findings are provided below.

Emotional Adjustment

In this study, hierarchical regression analyses results showed that youths' optimism significantly predicted their emotional adjustment outcome. Specifically, this finding was consistent with previous studies that optimists tend to have a lower level of depression compared to pessimists (Bennett et al., 2008; Hirsch et al., 2009; Puskar et al., 1999; Tusaie-Mumford, 2002). Previous research has suggested that optimists tend to use positive coping strategies when facing adversities (Geers, Wellman, & Lassiter, 2009). The assumption is that optimists have positive outcome expectations, and believe that their goals are attainable, which, in turn, drives them to actively pursue future goals (Carver & Scheier, 2002). Because optimists believe that their goals are attainable, even under adversity, they are more likely to work harder to overcome challenges, actively engaging in a problem-solving process rather than avoiding problems. A problem-solving process helps prevent optimists from greater stress and psychological distress (Carver & Scheier, 2002).

The adversities, such as having a parent with depression and living in a disorganized community, however, are uncontrollable. Optimists were less likely to give up their life goals, but tended to learn from the adversities, and adjust their aspirations. These optimistic adolescents seem to accept the reality that they can not always get what they want.

Acceptance here does not mean that youths passively accept negative influence of adversities on their lives, but that they develop a sense of “life is compromised (but not over)” (Carver & Scheier, 2002, p. 237). Thus, under great adversity, optimistic adolescents may respond to life stressors with humor, reframe the positive meanings from negative life events, adapt their life expectations, and develop feasible life goals to remain actively engaged in daily life (Carver & Scheier, 2002). This optimistic characteristic may explain why adversity was less likely to cause emotional distress for these youths.

Behavioral Adjustment

Hierarchical regression analyses results indicated that youths’ self-regulation capability, prosocial friends’ support, and parental monitoring significantly predicted youths’ behavioral adjustment outcome. This finding indicated that when these youths had a higher level of self-regulation capability, had prosocial friends, and their parents tended to consistently monitor their behavior, they had a lower level of conduct disorder symptoms. This finding was consistent with previous studies in which a higher level of self-regulation was associated with a lower level of conduct problems even though, in some research, it only explains part of the association (Strayhorn, 2002; Tremblay,

Boulerice, Arse-Neault, 1995). Youths who have a higher level of self-regulation capability tend to think before they act. Hence, they are also more likely to choose delayed rewards, and follow moral rules or formal regulations rather than pursue immediate gratification such as stealing money or shoplifting to satisfy their material needs.

In addition, this finding was consistent with research on a broad scope of conduct problems that prosocial peers directly negatively influence conduct problems (Smith, Flay, Bell, & Weissberg, 2001). Because friends often share some common values and engage in activities together (Güroğlu et al., 2007), these youths who hang out with prosocial friends whose behaviors meet the social norms, were less likely to engage in deviant activities.

Findings from this study also confirm previous studies that a higher level of parental monitoring is associated with youths' low levels of conduct disorder symptoms (Hartos & Power, 2000; Simons-Morton et al., 2004; Tiet et al., 2001) and a higher level of positive academic related outcomes (Garber & Little, 2005; Prelow & Loukas, 2003). For example, Prelow and Loukas (2003) found that parental monitoring was a significant predictor for children's academic achievement (math and language scores) and behavioral problems in school. They speculated as follows that positive association between parental monitoring and children's academic outcomes might result from a broad and consequential effect of parental monitoring: "mothers in high-risk contexts who monitor their children's whereabouts and activities may circumvent youth from engaging in problem behaviors that adversely affect achievement related outcomes.....parental

monitoring may also help children to conform to social norms for behavior and to develop self-regulatory skills” (p. 526). The explanation by Prelow and Loukas on the parental monitoring effect was similar to Rutter’s (1990) notion that a protective process reduces a negative chain reaction that result from risks. When parental depression and other risks increase the likelihood of developing multiple maladjustments for this study’s target youth, parental monitoring may initially prevent children from engaging in deviant activities. These youths who were aware of their parents’ monitoring are more likely to anticipate the consequences of their behavioral outcomes. Hence, they might consciously delay their immediate pleasure which was against their parents’ values, and tend to concentrate on the activities that their parents prefer such as school work. Furthermore, parental monitoring may also provide a good niche for their children to develop higher educational aspirations.

In addition to the potential catalysis of parental monitoring, findings of this study showed that parental monitoring provided a broad protection across their children’s developmental domains, and was the strongest predictor contributing to their children’s behavioral outcomes. Hence, one important contribution of this study is that it clarifies previous conflicting research findings regarding which resource —peer or parent— functions as the most powerful factor for children’s developmental domain (Gore & Aseltine, 1995; Smith, Flay, Bell, & Weissberg, 2001; Steinberg, 2000). Findings of this study indicated that parental influence was greater than peers. As Pinkerton and Dolan (2007) stated, in their study of family support, social capital, resilience and adolescent coping: “despite the fact that many young people were known to have a strained

relationship with their parents, it was parents who were the most often nominated sources of support-the core of the young people's social capital" (p.225). In this study, even though the family and community risks may increase primary caregivers' distress that further increases these youths' risk of developing maladjustment, parental monitoring still functions as the most influential protection for these youths. This finding suggests that to successfully assist these youths, helping parents develop better parenting skills is the first step.

The age of the youths in this study may partially explain why parental influence is greater than that of peers. Some researchers have suggested this is because parents often directly choose friends for their young children and affect their children's decisions about whom they should hang out with through a process of socialization (e. g. Smith et al., 2001; Steinberg, 2000). For example, Smith et al. (2001) examined the influences of parents and peers upon the low-income African American youths ages 10-15 and their involvement in violence. They concluded that a close parent-child relationship improves these youths' ability to select prosocial friends, which was related to the decreased violence involvement. Because the target youths of this study were 10-14 years old indicating that they were in late childhood to early adolescence, their parents may still play a crucial role in determining peer selection. Future research should explore the function of parental monitoring in late adolescence to young adulthood compared with the influence of the youths' self-regulation and prosocial friends.

School Adjustment

In this study, the results of the hierarchical regression indicated that, in addition to parental monitoring, teacher support significantly predicted youths' educational aspirations. Findings were consistent with past studies that teacher support was a protective factor promoting high-risk youths' adjustment in a broad scope of school-related adjustment such as youths' sense of school coherence (Bowen et al., 1998), and youths' educational goals (Gonzales, 1996; Marjoribanks, 1984, 1997; Williams, 1975).

One unexpected finding in this study was that a teacher's influence on educational aspirations was greater than parental influence, whereas past studies tended to suggest that parental-related factors were the most influential factor contributing to their children's educational aspirations (e.g. Books-Gunn, Guo, & Furstenberg, 1993; Marjoribanks, 1997; Wilson & Wilson, 1999). The economic circumstances of this study population may be a contributing factor to this finding.

Research has suggested that family income, parent(s)' educational level, parental school involvement, and parental educational aspiration for their children greatly contribute to children's academic outcomes (e. g. Brooks-Gunn, Guo, & Furstenberg, 1993; Marjoribanks, 1984, 1997; Seifried & Chung, 2002). Empirical evidence suggests that family financial stressors affect children's education attainment and academic related achievement, and that the process of the influence may vary by ethnicity (Seifried & Chung, 2002). Even though some African American parents expect their children to finish high school and enroll in college, financial stress may not only prevent these parents from supporting their children's education, but may also create distress for these

parents, which in turn decreases their capacity for helping their children cope with social and intellectual demands from school (Gutman & Eccles, 1999; Gutman & McLoyd, 2000).

Moreover, children's perceptions of family resources for higher education may also affect their academic intention and related activities (Destin & Oyserman, 2009). As noted by many family practitioners and researchers, family atmosphere is often created and shared by all family members (McCubbin, Thompson, & McCubbin, 1996; Nichols, & Schwartz, 2009). Hence, youths of this study, coming from lower income families, might have perceived that their parent(s) face great challenges in meeting their educational needs even though these children know that their parents consistently monitored their behaviors to ensure that they did not divert from their school-related work.

In contrast, teacher support serves as another source of "social capital" for these youths (Pinkerton & Dolan, 2007). Supportive teachers may provide a different perspective and solution from parents, and help increase these youths' hope for future educational opportunities. These teachers might not only demonstrate their caring to these youths and hold higher expectations of them, but also provide information about scholarships and other resources to encourage them to pursue higher education (Casey-Cannon, Pasch & Tschann, 2006; Saleebey, 2006). Hence, youths of this study who reported feeling close to a teacher might have received additional needed support from the teacher and then been better able to optimize educational opportunities despite their family's disadvantaged economic circumstances.

Protective Factors in the Risk-Increased & -Decreased Groups

Several ecological protective factors contributed significantly to youths' positive developmental outcomes in risk-increased and risk-decreased groups. One thing that should be noted is that the statistical power of this research was insufficient to test all predictors in risk-increased and risk-decreased groups. Hence, the study findings were very conservative. Consequently, the research models might not show all possible significant predictors, and might provide a lower estimate of the effect of each predictor.

Research findings indicated that the capacity for self-regulation was associated with low levels of conduct disorder symptoms in those youths who experienced increased risk from wave 1 to wave 2 (risk-increased group). In other words, under a higher risk circumstance, youths' self-regulation could determine their behavioral outcome. Furthermore, this study finding suggested that these at-risk youths still maintain hope in terms of educational attainment regardless of risk levels when they felt close to one teacher. This finding indicated the key role that a supportive teacher could play in these disadvantaged youths' future educational achievement.

Another finding suggested that parental monitoring was a protective factor for these youths' school performance even though the risk decreased and for youths' educational aspiration regardless of risk level. Hence, one important contribution of this study is that it extends current parenting literature as follows: 1) the parenting effect provides a broad protection across children's developmental domains; and 2) the effect of parental monitoring upon these target youths' educational aspiration tends to maintain the similar level regardless of whether the risk level increases or decreases. These findings warrant

the attention of policy makers and service providers and should be taken into account when considering how best to deliver services.

Unexpected Findings

This study did not support research hypotheses 1 (Positive self-regulation capability is more likely to serve as a robust protective factor for these target youths) and 2 (Positive parent-child relationship is more likely to serve as a robust protective factor for these target youths). One possible reason for these results is the different measures used by previous studies and this study. For example, previous studies have shown that youths' self-regulation can promote their positive outcomes; however, youths' self-regulation appears to have a different impact on these outcomes.

Depending upon how self-regulation is measured and upon what youths' outcome is assessed, these research findings may differ. Different focus of self-regulation aspects in previous studies may contribute to different findings (Kliewer et al., 2004; Moilanen, 2006). For example, Moilanen (2006) concluded that self-regulation assessed as short-term regulation (e.g. impulse control) correlated significantly with fewer internalizing symptoms; self-regulation assessed as long-term regulation (regulating toward goals) correlated significantly with less externalizing symptoms; and both types of self-regulations correlated significantly with better educational goals and grades. Alternatively, Kliewer et al. (2004) found that self-regulation assessed as emotional regulation has been associated with lower internalizing symptoms, but has no effect upon externalizing symptoms. In this dissertation research, the self-regulation scale focused on general behavioral-related regulation. This may explain, in part, why the data of this

study only showed a significant association between youth self-regulation and their behavior adjustment outcome.

Similarly, the use of different scales may, in part, explain why parent-child relationship did not function as a robust protective factor for this population. An alternative explanation is that the great influence of parental monitoring has explained most of the variance in youths' outcomes that could be explained by parent-child relationship. Theoretically, youths who reported having a good parent-child relationship tend to discipline their behaviors and act according to their parents' expectations (Focht & Beardslee, 1996; Landman-Peeters, et al., 2004; Walsh, 2003). This idea is supported by this study's bivariate correlation results—a positive parent-child relationship significantly correlated with youths' positive school performance ($p < .001$).

On the other hand, past research showed that, for high-risk African American youths, parental monitoring was a key strategy for parents to ensure that their children do not engage in problems related to living in a neighborhood with a high prevalence of deviance and in an area impacted overall by discrimination and poverty (Belgrave & Allison, 2006; Simons et al., 2002). Hence, the effect of the parent-child relationship on a child's developmental outcomes may be greatly explained by parental monitoring when both factors were taken into account in this research model. Therefore, the parent-child relationship did not show any significant effect on either youths' Education or Behavioral Models when parental monitoring was also included in the regression models.

Study Limitations

Three main limitations of this research design should be noted. First, the findings of this study are limited in generalizability. Due to the characteristics of this study sample, findings from this study better explain the circumstances of African American families where a primary caregiver has a diagnosis of depression and they live in rural and poor areas. Findings may be limited in generalizing to other ethnic groups and families in urban areas.

Second, because of the natural limitations of secondary data analysis, this study was unable to include one important theoretical protective factor (i.e. target youths' coping skill) in this research model. Furthermore, applying the findings to current youths and families facing similar life challenges could be limited to some degree because the data reflect youths' conditions in 1997 and 1999.

Third, because of limited statistical power, this study was unable to fully examine the interaction between risk and protective factors. Insufficient power directly threatens the internal validity of research findings and indirectly weakens the generalizability (Dattalo, 2008). The significant findings from risk-increased and risk-decreased groups could be also very conservative. The research models might not show all possible significant predictors and might under estimate the effect of each significant predictor.

Fourth, the results of factor analysis showed that two scales, optimism and self-regulation, explained only 30 % of the variance. This may cast doubt about the validity of

the scale. Future researchers should pay close attention to this issue when replicating this study.

However, these four main limitations should not overshadow this research's unique contribution to knowledge building in this area. Unlike most research in this area, this study used a non-clinical sample coming from rural and poor areas, included co-occurring risk factors, and systematically explored the robust protective factors and the interactive effects of risk and protective factors using a longitudinal dataset. These results not only contributed to the literature on this area but also generated more stable findings, despite being more conservative due to the limited statistical power.

Implications for Future Research

For future research focusing on protective mechanisms for families with a parent experiencing depression, several suggestions are provided below:

First, this study indicated that parental monitoring was a robust protective factor for this population. Parental monitoring not only has broad protection across these youths' behavior, school performance, and educational aspirations, but also was the most influential factor in behavioral and school performance outcomes. Findings also suggested that the effect of parents' monitoring was greater than peers' in terms of these target youths' behavioral and school adjustment. As discussed earlier, the age of the youth in this study may partially contribute to this finding. Given the continuous change of these target youths' internal and external environments, the effect of protective factors upon youths may vary by risk and their developmental needs. One suggestion for future studies is to continuously follow up the effects of parental monitoring, youths' self-

regulation, and prosocial friends' support upon the behavioral adjustment. Some questions that may interest future researchers include how long will the effects of parental monitoring last? How does the parental monitoring in childhood affect the developmental outcomes in late adolescence and young adulthood? Would other protective factors replace the significant role of parental monitoring when these children face different types of challenges in later stages of development? Moreover, future research replicating this research design may consider examining whether the parenting effects vary by ethnic groups.

Second, this study suggested that teacher support was the most influential factor contributing to the target youths' educational aspirations. Nevertheless, there is not sufficient empirical evidence to explain in depth how a teacher's support functions as a protective factor for this target population. This warrants further study, in particular with the use of qualitative methods that could produce more in-depth word data that may be more likely to provide insight and understanding of the relationship.

Third, as suggested in the literature, the influence of depression on persons and their families may vary by the characteristics of the illness such as comorbidity, severity, chronicity, and the age of onset (Beardslee, Versage, & Gladstone, 1998; Hammen & Brennan, 2003). Given the complexity of the depressive mood itself, primary caregivers who do not meet Major Depression Disorder or Dysthymic Disorder criteria still suffer from the effect of depressive symptoms to some degree (Clark, Cook, & Snow, 1998). Severe depression symptoms could greatly impair the ill person's ability to take care of themselves and their children. Hence, more research is needed to examine how protective

factors function in different family contexts in which depression is present. This kind of knowledge might help practitioners and policymakers better understand the diverse needs of these families and guide development of prevention/intervention programs.

Fourth, past studies have suggested that secondary caregivers may affect children's developmental outcomes directly through parenting behaviors, and/or indirectly through relationships with primary caregivers (Belgrave & Allison, 2006; Seifer, 2003). Because of the limited statistical power, this study initially only used one variable, the presence of a secondary caregiver at home, to explore its association with target youths' outcomes. However, this variable was later removed from the research model because the primary data analysis suggested no significant association between this variable and target youths' outcomes. Future studies with sufficient sample size should further explore how the presence of the secondary caregiver and the secondary caregiver's relationship with the primary caregiver may affect the target youths.

Fifth, conceptual clarity is an important element for empirical testing (Fisher, 1973). Since the concept of youths' self-regulation is less clear and how to assess youths' self-regulation will affect the research findings, clarification of the concept of self-regulation and ongoing improvement of the self-regulation scales are needed. Qualitative methods could be useful to help clarify the concept with a specific research population (Ungar, 2003). With greater conceptual clarity and improved scales, researchers can better explain the protective effect of different kinds of self-regulation on high-risk youths.

Finally, future research may consider verifying this study's findings through different sources of data and methods. Guided by the literature (e.g. Simons, Simons,

Chen, Brody, & Lin, 2007), this research used the parent's report for measuring family financial stress and disorganized community, and the youth's report for measuring six theoretical protective factors representing positive support and resources from individual-family-community systems. However, this decision may, in part, have led to a low correlation between some variables because of different response resources. It is also possible that social desirability bias¹⁷ has affected these target youths' responses to questions regarding to their maladjustment. Hence, future studies may consider using different data sources to measure the target youths' outcomes. Specifically, if the research population is younger children, report from a parent, teacher, and/or observer, and a school grade-related document could be more appropriate. However, if researchers consider using a parent's report for his/her children's behavior and emotional outcomes information, they need to evaluate the possibility that depressive symptoms may bias the ill parent's perception of their children's maladjustment (Langrock et al., 2002; McFarland & Sanders, 2003).

Implications for Social Work Practice

While parental monitoring appears to have a widespread effect across different domains of developmental outcomes, the other protective factors in this study are more specific. These findings warrant the cooperation among different disciplines, agencies, organizations, and services systems. Especially given that the services and resources in rural areas more often tend to be scattered and delivered by informal and nonprofessional

¹⁷ Respondents may not accurately report behaviors and attitudes because they assume that their true behaviors and attitudes will be against social expectations and reflect badly on them (Rubin & Babbie, 2005)

service providers, enhanced collaboration among these existing services is key to maximizing these high-risk youths' positive outcomes in overall developmental domains (SAMHSA, 2008). The following section will discuss how this study's findings could be used to help inform intervention programs and service delivery systems. To help establish the context of this recommendation, a brief review of intervention programs for school-aged children and adolescents who have a parent with an affective disorder¹⁸ is provided first.

A Review of the Existing Intervention Programs

Most of these interventions did not explicitly mention a theory in their program design. For those programs providing detailed information about a theoretical framework, a broad scope of cognitive-behavior theories¹⁹ were most frequently mentioned (e.g. Beardslee et al., 1993, 1997; Clarke et al., 2001, 2002). Individual and group cognitive-behavior therapy (CBT) has been documented as an effective intervention for treating individuals with depression and behavioral problems (e.g. Beck, 1995; Beck & Weishaar, 1989; Clarke et al., 2001, 2002).

However, for the depression problems, CBT programs could be more effective for reducing symptoms of depression, but not for the diagnosis of depression. Based on a series of experimental studies, Clarke and colleagues (2001, 2002) concluded that CBT effectively reduce the symptoms of depression in children who have a parent with a diagnosis of depression. However, there is not sufficient evidence to suggest that CBT

¹⁸ Because very few interventions focused only on families where a parent was diagnosed with depression, the review was extended to families with a parent with an affective disorder.

¹⁹ According to Beck (1995) and Ellis (1995), cognitive-behavioral theory which integrates cognitive theory and behavior theory is a model that practitioners use to change clients' distorted cognitions (e.g. the distorted information-coding process and faulty beliefs).

can treat those children who already have a diagnosis of Major Depression Disorder or Dysthymia. These findings warrant providing early preventive services to children with symptoms of depression.

One interesting finding resulting from this review of intervention programs is that few studies, except for the classic CBT approach focusing on depression, included children's depression, conduct behavior symptoms, or school-related adjustment in their outcome measures although most intervention programs acknowledged these potential problems for these at risk children (e.g. Beardslee et al., 1993, 1997; Focht & Beardslee, 1996; Jewell & McGinn, 2004; Orel et al., 2003; Pitman & Matthey, 2004; Rimington & Forer et al., 2004). Most of these evaluation studies concluded that their interventions improved participants' knowledge of mental health and mental illness (Orel et al., 2003), parent-child communications and relationships (Focht & Beardslee, 1996), a broad scope of parenting skills (Jewell & McGinn, 2004), children's stress-coping and social skills (Pitman & Matthey, 2004; Orel et al., 2003); and reduced children's negative feelings and attitudes toward their parents' mental illness (e.g. Pitman & Matthey, 2004) and parents' feeling of powerless or worrying (e.g. Jewell & McGinn, 2004). Although these improvements could further prevent maladjustment of the target children/youths in emotions and behaviors, findings derived from previous intervention programs do not provide direct evidence that these intervention programs can prevent or decrease depression symptoms, conduct behavior symptoms, or school-related adjustment for these high-risk populations.

One criticism of previous intervention programs in families with a parent with an affective disorder is the absence of social factors in the intervention (Fraser, James, Anderson, Lloyd, & Judd, 2006). It is broadly recognized that a family with a parent with depression tends to face multiple social stressors and lack social support and resources (Cowling, Cuff, Luntz, & Verscharen, 2004; Doewney & Coyne, 1990; Fraser et al., 2006). Nevertheless, few intervention programs intend to address these social factors. Exceptions include several small scale community support programs aimed at empowering parents with mental illness to be confident in taking care of their children (Jewell & McGinn, 2004), and youth groups focusing on helping youths of a parent with mental illness connect with other supportive adults and peers (Orel et al., 2003; Pitman & Matthey, 2004; Rimington & Forer et al., 2004).

However, few existing intervention programs that use a design with good internal validity included social factors in their models. Perhaps, most “scientifically rigorous” intervention programs that require controlling for extraneous variables need to focus on small scale problems involving individual or family aspects rather than community and social aspects. Otherwise too many extraneous variables may affect the internal validity of a given intervention. Therefore, there is little knowledge regarding the intervention effect of intervention programs including social factors.

Finally, many intervention programs were conducted in urban areas. Hence, there is relatively little information regarding the external validity of these intervention effects for individuals in rural areas (Fraser, James, Anderson, Lloyd, & Judd, 2006). This may, in

part, reflect the unequal distribution of mental health resources, particularly a limited availability of resources in rural areas (Sawyer, Gale, & Lamber, 2006).

In summary, a broad range of cognitive-behavioral approaches have been widely used for treat individuals who have been diagnosed with depression or have symptoms of depression. This available information seems to indicate that CBT is more effective in decreasing symptoms of depression than treating individuals who have been formally diagnosed with depression. This finding emphasizes that early preventive intervention can reduce the development of a psychiatric diagnosis. In addition, previous intervention programs have demonstrated their effectiveness in enhancing mental health related knowledge, parent-child relationships, communication, parenting skills, and children's coping skills. However, the external validity of these intervention programs to individuals in rural areas requires more empirical evidence. There is also a lack of sufficient intervention programs that include social factors (e.g. reducing family's financial stress, improving living environments, and enhancing social resources) in their service packages, and use the criteria of children's emotional distress, conduct behavior, and school adjustment as outcome measures. Based on the above information and findings from this study, the following recommendations are provided to improve interventions and mental health-related services for families of a parent with depression.

Implications for Practice

Early Identification of High-Risk Populations to Provide Prevention Services

The Substance Abuse and Mental Health Services Administration (SAMHSA, 2008) suggests that the best mental health services should go beyond diagnosis and treatment to

provide prevention services. As previous studies showed, CBT is effective for reducing individuals' symptoms of depression but not for treating individuals with a diagnosis of depression (Clarke et al., 2001, 2002). Early identification and service delivery to at-risk populations before they develop a mental illness, which Gordon (1987) called universal, selective, and indicated preventive interventions²⁰, are more likely to prevent unfavorable outcomes in at-risk populations (Greenburg et al., 2000; Institute of Medicine, 1994). Moreover, to enhance the effectiveness of preventive programs, early identification of high-risk populations is crucial. The first step is for service providers (e.g. social workers, psychologists, other professionals, or nonprofessional service providers) to acknowledge risk factors related to individuals' (mental) health and social functioning. High-risk screening tools should be easily accessible for these services providers, especially in settings such as churches, schools, hospitals, social service agencies, and community mental health centers.

Include Social Factors in Service Programs: Enhance Parenting Training

In the U.S. and perhaps many European countries, parents have been taught to respect their children's autonomy and privacy, particularly youths and adult children. Hence, some parents may feel uncertain about monitoring their youths' behavior. However, findings from this dissertation suggested that, in a family with a parent with depression, parental monitoring was very important in promoting their youths' positive

²⁰ Universal preventive interventions target the general public. Selective preventive interventions target a specific population whose risk of developing a mental disorder is higher than average. Indicated preventive interventions target a population having symptoms related to a mental illness but not yet meeting diagnostic criteria (Greenburg et al., 2000, p.5-6)

behaviors and school-related adjustment. This finding also warrants having intervention models and social services focus on parental monitoring.

For youths who face family-related stressors and experience ongoing changes in their physiology, cognitive capability, and social roles, a consistent monitoring mechanism may help deter the development of maladjusted behaviors. Parents' knowledge of their youths' whereabouts and activities may also convey a caring message that ensures reliable support to these youths. This message could be vital for these children and youths in a family facing many stressors.

The cost-effectiveness of promoting parental monitoring through an intervention or prevention program could be very impressive because since parental monitoring not only had a broad protective effect but also was the most influential factor to decreasing target youths' conduct problems. With this information, even though some service providers may not have professional training, such as church members, they can also consider arranging some informal gathering to help these parents with depression improve their parenting skills. Helping professionals, such as social workers in a hospital setting, can regularly conduct assessment of parenting skills on inpatients or outpatients with depression, provide parenting training, and/or connect families with needed resources to enhance parenting knowledge and skills.

Nevertheless, engaging families with a parent with depression in parenting skills training could be challenging. As noted earlier, almost half of the target families in this study were single mother headed families without a secondary caregiver at home. Therefore, most families in this study might have struggled to make ends meet and could

not afford to take off from work or leave their young children at home to attend intervention programs. Moreover, other barriers such as negative attitudes toward mental illness and help-seeking behaviors, and a lack of public transportation, particularly in rural areas and in African American families, may also discourage some families from seeking professional help (Wrigley, Jackson, Judd, & Komiti, 2005). Hence, service providers need to take these social factors/barriers into account when they design the content and the logistics of intervention programs. Several recommendations to address these social factors that impact service delivery are listed below.

Educate the Public regarding the Mental Health and Treatment. To help reduce the public's misunderstanding of mental illness, advocacy agencies should educate the public about mental health and mental illness (e.g. what causes depression and how to treat depression). Improving the public's knowledge of mental illness can partially reduce social stigma of and make it more inviting and safe for potential participants to seek help (Greenberg, Domitrovich, & Bumbarger, 2000). Medical staff, school teachers, and religious leaders who might have a higher social reputation in certain cultural groups could be persuasive representatives to educate the public. Moreover, to mitigate the negative attitudes toward help seeking behaviors, agencies can include encouraging statements in their marketing materials to motivate potential participants to take part in intervention programs. For example, depression is not the result of God's punishment on individuals' or family's misbehaviors but is a medical illness; depression is not something that you can solve by yourself; and depression is a highly treatable illness, the earlier you receive treatment the better the treatment effect (NIMH, 2009).

Provide Needed Resources to Program Participants. In some rural areas, transportation is a barrier to seeking and receiving services for some potential service recipients (Virginia Board for People with Disabilities, 2008). Hence, to reduce this barrier, service providers should consider providing transportation services along with the intervention programs. Transportation services include, but are not limited to, providing information, arranging, and actually providing transportation to participants. There are many cost effective strategies that agencies can use to decrease transportation barriers to potential participants. For example, if the transportation budget is limited, agencies might consider cooperating with other relevant agencies to share the cost of transportation services such as purchasing or renting a bus or van together; or hold the training programs in the sites that potential participants can easily access such as a school, church, and or large factory.

In addition, depending upon the severity of the depression, the parent may have difficulty consistently attending intervention programs and practicing skills at home which, in turn, may decrease the intervention effect (Thomas & Kalucy, 2003). Hence, service designers may want to consider including medical treatment as part of intervention, or building a partnership with local medical systems to ensure that program participants receive adequate medical treatment to help maintain their basic level of social functioning. Specifically, agencies should consider cultural factors when selecting a partnership. For example, some minorities feel more comfortable seeking help from those who has the same cultural background, understand their cultures, and/or speak their language (SAMHSA, 2008).

Reduce Financial Barriers to Accessing Services. Empirical evidence has shown that minorities are less likely to receive mental health treatment, especially for those having insufficient income to buy healthcare services (SAMHSA, 2008). To minimize these financial barriers, service providers may consider providing free services, return the service fees to those who complete a certain amount of training, or setting aside a small amount of money dedicated to those participants who complete the training. This financial incentive may motivate participants to consistently attend training programs.

Extend Family and School Prevention Approaches: Improve Self-Regulation

Findings from this study indicated that youths who have good self-regulation capability are more likely to calm their emotions and control their behaviors when they feel distress which, in turn, reduces distress. To help at-risk children develop greater capacity for self-regulation, intervention programs should consider extending interventions focusing on identified children and partnering with their families and teachers. Evidence suggests that both children's natural characteristics and the level of nurturance in their environments influences the development of children's characteristics and ability to meet social expectations and cultural norms (National Research Council and Institute of Medicine, 2000; Wachs, 2000). When teachers and parents have the capacity to teach children in their early developmental stages to adjust their expectations, emotions, and behaviors according to different situations, children have a greater chance of developing personal assets to face adversities later in life (Craig & Dunn, 2007). Hence, self-regulation training should not be limited to children, but should be extended to teachers and parents as well.

Extend Supportive Networks: Enhance Peer and Teacher Support

Findings from this dissertation research indicated that youths' optimism could help prevent emotional maladjustment. However, even optimistic children could eventually exhaust their personal resources or assets. Some of them may become discouraged and maladjusted if there are limited resources to support them. Under stressful circumstances, some families may have difficulty maintaining basic functions and meeting the emotional needs of others, particularly when they suffer from multiple stressors along with depression such as poverty, interpersonal conflicts, and violence inside or outside of family (Marsh, 1998). Previous studies also show that individuals tend to develop a sense of helplessness toward current life challenges and hopelessness toward their future when they are exposed to chronic stress, receive no support from others, and experience limited outcomes or results from their long-term efforts (Seligman, 1996). Therefore, positive social networks could be very important for these target youths whose families suffer from illness and other stress (Pinkerton & Dolan, 2007).

Findings of this study particularly noted the importance of teacher support and prosocial friends for the target youths. Prosocial friends and teachers provided support when these youths were distressed and lonely. They may also offer these youths alternative perspectives and solutions to facing life challenges. The power of consistent support and caring helped protect these youths from being overwhelmed by adversities and perhaps being less prone to antisocial peers and behaviors. Given this finding about the preventive value of these prosocial relationships and teachers' support, programs for these target youths should encourage them to extend their positive social network and

maintain relationships with prosocial friends and supportive adults such as teachers, coaches, church leaders, youth group leaders, volunteers and staff in recreation and social services systems. Extended families, neighbors, and church members who are close to these families may be another source of support. For African American families, practitioners should pay close attention to the support of extended family and church members in that many African Americans may feel more comfortable with these groups than formal support. When local resources are scarce or there is a lack of connection, social workers may need to facilitate the coordination or the development of such services.

Implication for Social Work Education: Strengths-Focused Approach

Traditional mental health-related training and practice models in social work education have been criticized for overly emphasizing pathology and dysfunction (Bendor, Davidson, & Skolnik, 1997). The DSM-IV has been incorporated in social work education in a systematic way, especially in the mental health field, to help train students to assess mental illness related problems. In contrast, knowledge, research, and course content focusing on persons' strengths are less well developed although there is an increased emphasis on strengths-based practice in social work (Bendor, Davidson, & Skolnik, 1997; Saleebey, 2006). One of the possible negative consequences of this focus on pathology is that social work students may be more aware of clients' problems rather than their strengths (Saleebey, 2006).

Hence, the findings of this research provide empirical information to help social work educators challenge their students to understand the strengths of a disadvantaged

population. As resilience authors have argued, resilience is not a product of individuals' rare qualities or special environmental resources but from "ordinary" resources and positive characteristics within and around these at-risk individuals that help promote their well-being (Garmezy, 1993; Masten, 2001; Rutter, 2006; Saleebey, 2006). The findings of this study identify the following key ordinary protective factors for youths who have a parent with depression: youths' optimism, self-regulation capability, parental monitoring, prosocial friends, and teach support.

Moreover, social work educators can help reduce the myth about the linear cause-effect relationship between parental depression and their children's maladjustment (McCubbin, Thompson, & McCubbin, 1996; Walsh, 2003). This study suggested that parental monitoring was vital for these youths' behavioral and academic outcomes and it consistently functioned as a protective factor even under the higher level of risk effects. With this information, social work educators can help students understand parents and families regardless of the illness and what appear to be disadvantaged positions could be seen as a potential source of nurturance and support.

Finally, to enhance students' sensitivities and capacity to identify strengths in each unique family facing mental health related challenges, social work educators should encourage them with critical thinking and active listening. Social work instructors have used multiple teaching methods, such as videos, readings, and guest speakers to help students better understand the circumstances of clients, develop greater empathy, and enhance professional sensitivity. Although these approaches help students develop competence in knowing the strengths and limitations of a given population, students

probably could never be prepared well enough in terms of knowing all strengths and risks of a given group and then applying this knowledge to different individuals. Johnson and Munch (2009) remind readers of the complexity and what they consider contradictions of culturally competent practice, suggesting cultural “humility” (p. 229) is more achievable. Hence, educators should consistently remind and encourage students to approach clients with an openness and respect, listening carefully to their stories given that clients are experts about their life experiences which were composed of strengths and resources that provide valuable knowledge. Educator should also continue modeling critical thinking in class and requiring critical thinking in assignments to broaden students’ perspectives, to identify the knowledge gaps, and then to address possible solution.

Conclusions

The risk and protective factors that contribute to the adjustment and maladjustment in youths who face multiple risks related to parental depression could derive from various systems, and these factors are interrelated to some degree. Hence, to address the needs of these youths and their families, it is necessary to build an enhanced cooperative working model among different disciplines and across agencies, organizations, and systems. Findings from this research indicated that youths' self-regulation and optimism, parental monitoring, teacher support, and prosocial peers can promote favorable outcomes in youths who face multiple stressors related to parental depression. Parental monitoring particularly provides a broad protection across these youths' different developmental domains. Based on the findings from this study, six suggestions for future research, four

recommendations for intervention and mental health-related services systems, and one suggestion for social work education were provided.

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Appendix A: Youth Depressive Symptoms

In the last year, was there a time when

1. you often felt sad or depressed
 - 2) Yes
 - 0) No
2. nothing was fun for you and you just weren't interested in anything
3. you often felt grouchy or irritable and often in a bad mood, when even little things would make you mad
4. you lost weight
5. you lost your appetite or often felt less like eating
6. you gained a lot of weight
7. you felt much hungrier than usual or when you ate a lot more than usual
8. you had trouble sleeping, that is, trouble falling asleep, staying asleep, or waking up too early had trouble sleeping
9. you slept more during the day than you usually do
10. you often felt slowed down... like you walked or talked much slower than you usually do
11. you often felt restless... like you just had to keep walking around
12. you had less energy than you usually do
13. doing even little things made you feel really tired
14. your arms and legs felt heavy, like you were weighed down by them
15. you often blamed yourself for bad things that happened
16. you couldn't do anything well or that you weren't as good-looking or as smart as other people
17. you couldn't think as clearly or as fast as usual
18. you often had trouble keeping your mind on your schoolwork
19. it was often hard for you to make up your mind or to make decisions
20. you often thought about death or about people who had died or about being dead yourself
21. you thought seriously about killing yourself
22. Now thinking about the whole last year, have you tried to kill yourself

Appendix B: Youth Conduct Behavioral Symptoms

Have you ever...

1. secretly stolen money or other things from your family or from other people you live with?
 - 2) Yes
 - 0) No
2. shoplifted - that is, stolen something from a store when you thought no one was looking
3. stolen from anyone else when they weren't around or weren't looking
4. faked someone's name on a check or used someone's credit card without permission?
5. snatched someone's purse or jewelry
6. held someone up or attacked somebody to steal from them
7. threatened someone in order to steal from them
8. gotten into trouble because you stayed out at night more than two hours past the time you were supposed to be home
9. run away from home overnight
10. lied to get money or something else you wanted
11. lied so that you wouldn't have to pay back money you owed, or to get out of something important you were supposed to do
12. skipped school
13. broken into a house, a building or a car
14. broken something or messed up some place on purpose, like breaking windows, writing on a building, or slashing tires
15. broken or damaged somebody else's things on purpose
16. started a fire without permission
17. been physically cruel to an animal and hurt it on purpose
18. bullied someone in this way [hitting or threatening or scaring someone who is younger or smaller than you or somebody who won't fight back.
19. threatened someone or frightened someone on purpose
20. been in a physical fight in which someone was hurt or could have been hurt?
21. tried to hurt someone badly or been physically cruel to someone
22. hurt someone with a weapon like a bat, brick, broken bottle, knife, or gun

- 23. been expelled from school for misbehavior - that is told that you could never go back to that school at all
- 24. been suspended from school for misbehavior – that is, told that you could not go back to school for at least a day
- 25. had an "in-school" suspension - that is , where you went to school but you weren't allowed to attend your usual classes
- 26. been in trouble with the police
- 27. been fired from a job for fighting or stealing or breaking things on purpose or because you wouldn't do what you were asked to do

Appendix C: Youth School Performance

1. How often have you been in trouble for skipping or not attending school?
 - 1) Often
 - 2) Fairly often
 - 3) Sometimes
 - 4) Or Never
2. You try hard at school. Do you...
3. Grades are very important to you. Do you...
4. Other students think you are a good student. Do you...
5. You do well in school, even in hard subjects. Do you...
6. Even when there are other interesting things to do, you keep up with your schoolwork.
 - 1) Strongly agree
 - 2) Agree
 - 3) Disagree
 - 4) Or Strongly disagree

Appendix D: Youth Educational Aspiration

1. If you could go as far as you wanted in school, how much education would you like to have?
 - 1) Less than high school
 - 2) Graduate from high school
 - 3) More than high school
2. How far do you think you will actually go in school?

**Appendix E: University of Michigan Composite International Diagnostic
Instrument
(UM-CIDI) ²¹**

1. In your lifetime, have you ever had two weeks or longer when nearly every day you felt sad, empty, or depressed for most of the day?
 - 1) Yes
 - 0) No
2. In your lifetime, have you ever had two weeks or longer when you lost interest in most things like work, hobbies, and other things you usually enjoyed
3. What about other problems you had during a period when you [fill E4PHRASE] ²²for two weeks or longer? Did you have less appetite than usual almost every day
4. During one of those periods, did you lose weight without trying to, as much as two pounds a week for several weeks
5. During one of those periods, did you have a much larger appetite than is usual for you almost every day for two weeks or more
6. During one of those periods, did your eating increase so much that you gained weight as much as two pounds a week for several weeks
7. When you [fill E8PHRASE] ²³, did you have trouble sleeping almost every night for two weeks or more either trouble falling asleep, waking in the middle of the night, or waking up too early
8. When you were feeling depressed, had lost interest in things, or lacked energy, did you have trouble sleeping almost every night for two weeks or more either trouble falling asleep, waking in the middle of the night, or waking up too early
9. Did you wake up at least two hours before you wanted to every day for at least two weeks
10. During a period when you [fill E9PHRASE] ²⁴, were you sleeping too much almost every day
11. During one of those periods, did you talk or move more slowly than is normal for you almost every day for at least two weeks
12. Did anyone else notice that you were talking or moving slowly
13. During one of those periods, did you have to be moving all the time -that is, you couldn't sit still and paced up and down or couldn't keep your hands still when sitting?

²¹ Sample questions.

²² The information in [fill E4PHRASE] could be either 1) felt depressed, 2) felt depressed or felt tired all the time, 3) lost interest in things, 4) lost interest in things or felt tired all the time, 5) felt depressed or lost interest in things, 6) felt depressed, lost interest in things, or felt tired all the time depending on what respondents answer in the previous items (L.S.V. Lune, personal conversation, October 14, 2008).

²³ The information in the [fill E8PHRASE] is the same as the notation 1.

²⁴ The information in the [fill E9PHRASE] is the same as the notation 1.

14. Did anyone else notice that you were moving all the time?
15. During a period lasting two weeks or longer when you [fill E3PHRASE]²⁵, did you lack energy or feel tired all the time nearly every day, even when you had NOT been working very hard?
16. During one of those periods, did you feel worthless nearly every day
17. Did you feel guilty
18. During one of those periods, did you feel that you were not as good as other people
19. Did you have so little self-confidence that you wouldn't try to have your say about anything
20. During one of those periods, did you have a lot more trouble concentrating than is normal for you
20. Were you unable to read things that usually interest you or watch television or movies you usually liked, because you couldn't pay attention to them
21. Did your thoughts come much slower than usual or seem mixed up
22. Were you unable to make up your mind about things you ordinarily had no trouble deciding about
23. During one of those periods, did you think a lot about death
24. Did you feel so low you thought a lot about committing suicide
25. Did you make a plan as to how you might do it
26. Did you attempt suicide

²⁵ The information in the [fill E3PHRASE] could be either 1) felt sad, empty or depressed; 2) felt sad, empty or depressed or lost interest in things; or 3) lost interest in things depending on what respondents answer in the previous items (L.S.V. Lune, personal conversation, October 14, 2008).

Appendix F: Inability to Make Ends Meet

1. During the past 12 months, how much difficulty have you had paying your bills?
Would you say...
 - 1) A great deal of difficulty
 - 2) Quite a bit of difficulty
 - 3) Some difficulty
 - 4) A little difficulty
 - 5) Or no difficulty at all

2. Think again over the past 12 months. Generally, at the end of each month did you end up with...
 - 1) More than enough money left over
 - 2) Some money left over
 - 3) Just enough to make ends meet
 - 4) Almost enough to make ends meet
 - 5) Or not enough to make ends meet

Appendix G: Disorganized Community

1. How about litter, broken glass or trash on the sidewalks or streets? Is it...
 - 1) A big problem
 - 2) Somewhat of a problem
 - 3) Or not at all a problem
2. Graffiti on buildings and walls? Is it...
3. Vacant or deserted houses or storefronts. Is it...
4. Drinking in public. Is it...
5. People selling or using drugs. Is it...
6. Groups of teenagers or adults hanging out in the neighborhood and causing trouble. Is it...
7. Gang violence. Is it...

Appendix H: Self-Regulation

1. When you promise to do something, people can count on you to do it. Is that...
 - 1 Not at all true
 - 2 Somewhat true
 - 3 Or very true
- 2.* You can deliberately calm down when you are excited or "wound up". Is that...
- 3.* You stick with what you're doing until you've finished with it. Is that...
- 4.* When you have to wait in line, you do it patiently. Is that...
- 5.* You usually sit still in class. Is that...
- 6.* You usually think before you act. Is that...
7. You prefer to concentrate on one thing at a time. Is that....

Notation: * indicates remaining items after factor analysis

Appendix I: Optimism

1. In uncertain times, you usually expect the best. Do you...
 - 1) Strongly agree
 - 2) Agree
 - 3) Disagree
 - 4) Or strongly disagree
2. It's easy for you to relax. Do you...
- 3.* If something can go wrong for you, it will. Do you...
4. You always look on the bright side of things. Do you...
5. You are always optimistic about your future. Do you...
6. You enjoy your friends a lot. Do you...
7. It's important for you to keep busy. Do you...
- 8.* You hardly ever expect things to go your way. Do you...
- 9.* Things never work out the way you want them to. Do you...
10. You don't get upset too easily. Do you...
11. You are a believer in the idea that "every cloud has a silver lining" Do you...
- 12.* You rarely count on good things happening to you. Do you...

Notation: * indicates remaining items after factor analysis

Appendix J: The Positive Parent-Child Relationship

1. How satisfied are you with your relationship with your primary caregiver? Are you...
 - 1) Very satisfied
 - 2) Fairly satisfied
 - 3) Fairly dissatisfied
 - 4) Or very dissatisfied

2. How happy are you with the way things are between you and your primary caregiver?

Appendix K: Parental Monitoring

1. How often does your primary caregiver know what you do after school? Is it...
 - 1 Always
 - 2 Often
 - 3 Sometimes
 - 4 Or never
2. How often does your primary caregiver know where you are and what you are doing?
3. How often does your primary caregiver know how well you are doing in school?
4. How often does your primary caregiver know if you do something wrong?

Appendix L: Prosocial Friends

- 1.* If you took part in school activities like band, choir, clubs or school dances, would your close friends ...
 - 1) Tell you to stop
 - 2) Do nothing
 - 3) Encourage you to do it again
2. If you took part in community activities like YMCA, YWCA, Scouts, Boys Club, Campfire, or 4-H, would your close friends...
- 3.* If you took part in sports at school, would your close friends...
- 4.* If you took part in church activities, would your close friends...
- 5.* If you worked hard to get good grades in school, would your close friends...
- 6.* If you saved money to go to college, would your close friends...
7. If you helped at home by doing things like cleaning, doing dishes, or taking care of your brother or sister, would your close friends...
8. If you helped at home by spending money you have earned on food, clothing, or rent for the family, would your close friends...
9. If you got a part-time job, would your close friends...

Notation: * indicates remaining items after factor analysis

Appendix M: Teacher Support

1. You feel very close to at least one of your teachers. Do you...

- 1 Strongly agree
- 2 Agree
- 3 Disagree
- 4 Or Strongly disagree

Vita

Hsing-Jung Chen was born on November 18, 1975, in Tainan, Taiwan. She received her Bachelor in Social Work with a minor in Psychology from Fu-Jen Catholic University in 1998, Taipei, Taiwan. She obtained her Master of Social Work Degree from Soochow University in 2001, Taipei, Taiwan. Ms. Chen's master thesis was awarded by the National Science Council in Taiwan. She was also awarded a Disability Policy Fellowship from Virginia Board for People with Disabilities from 2008-2009. She received her Ph.D. Degree in Social Work from Virginia Commonwealth University in 2009.

Ms. Chen has focused on families with a member having a mental illness and with high-risk children and adolescents. Before pursuing her doctoral degree, Ms. Chen was a licensed psychiatric social worker in a teaching hospital in Taiwan. In addition to social work practice, she also taught social work and medical students about clinical social work theories and skills. During the pursuit of her doctoral degree, she taught Communication in the Helping Process to students in the Bachelor of Social Work programs at Virginia Commonwealth University.